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THE INFLUENCE OF BOSTON ON AMERICAN MEDICINE*

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GENTLEMEN of the Board of Trustees, of the Staff and of the Alumni; when I received your very flattering invitation to deliver the Ether Day address in this venerable institution, I was told that I need not feel obliged to talk on Ether, that my hearers would be for the most part laymen and that the address should occupy an hour. This information gave me both relief and distress; relief because it would have been difficult to deal with the question of ether or anaesthesia without repeating what has been said to you in this room so ably by others, and distress because I am unaccustomed to address any but medical audiences and because I was asked to talk for an hour. Nothing but a political speech, an appeal to a jury or a speech for home consumption delivered on the floor of Congress should ever consume an hour in its delivery. Sir William Osler said that punctuality and brevity were requisites for success in medicine and that when cultivated they bring success even with other qualities lacking. Then let us be punctual and strive to be brief, both save time, everybody's!

It is fitting in this hurrying life we lead to stop from time to time and soberly contemplate the past, its achievements and the lives of those who brought them to pass. Wisdom was neither born with us nor will it die with us and if as individuals or as groups we think so, we have but to look backwards. The road we are travelling is one our ancestors trod a little more sedately; the scenery and method of locomotion alone are changed. What we are doing to-day and constantly boasting of doing is only possible by the really epoch-making discoveries of our predecessors. Without the Harveys, the Pasteurs, the Kochs, the Mortons, the Listers, where would be our modern medicine and surgery? A contemplation of the lives and works of these men should be a part of the every day life of the modern medical man lest he become too content with his own accomplishments. In one of his addresses Sir William Osler said, "What, after all, is education but a subtle, slowly-effected change due to action upon us of externals; of the written record of the great

minds of all ages, of the beautiful and harmonious surroundings of nature and of art, and of the lives, good or ill, of our fellows—these alone educate us, these alone mould the developing minds."

In this connection I should like to refer to the benefits to the profession of societies for study of the history of medicine. One of the sections of the College of Physicians of Philadelphia is devoted entirely to this subject and the senior students of the medical schools and the hospital internes are particularly invited to attend the meetings. It is an excellent means of "moulding the developing minds."

Ether Day, then should be observed and its celebration should not only have a salutary effect on the Boston medical man, but should beget reverence and inspiration in the profession at large. I believe it has had this effect on those who have read the many addresses delivered by my eminent predecessors.

Since this hospital so recently celebrated its one hundredth birthday with many notable addresses depicting its birth and growth, its trials and its triumphs; together with some description of the former distinguished members of its staff, there remains little to be said along these lines, or even about the contributions made to medicine by such men as James Jackson, the Bigelows, the Bowditchs, the Warrens, Oliver Wendell Holmes, J. B. S. Jackson, the Cabots, Reginald Fitz, Maurice Richardson and many others whom we all love to honor, for they are as well known to every student of the history of medicine as is Morton and his introduction of ether as an anaesthetic. What then am I to talk about? In reading the lives of men who have wrought changes, who have forged ahead of their time, who have had visions of the future and who have had the courage to run counter to accepted dogmas in medicine, it is interesting to note their personal characteristics, their foibles and weaknesses and their attitude toward their fellow-workers. What we call their "natures," and it is this side of the lives of some of your distinguished men which has most interested me and has caused me to believe that it had much to do with the influence which they exerted on their fellows at large.

*Delivered at the Massachusetts General Hospital on the 79th Anniversary of Ether Day, October 16, 1925.

When considering the influence of medical men on their profession one naturally turns to their achievements in medical science, art and literature, but I have in mind something in addition to this, an influence that one might exert who had made no great discovery in science, whose name had not been attached to some surgical procedure and whose contributions to literature had not been startling. I mean an influence which those qualities which constitute character exert. I realize that accomplishment and character usually go together, but it is not always so. Achievement may make a man celebrated, but if he has not the love and the confidence of his fellow-workers, his discoveries, his productions, his contributions are adopted and utilized but his influence amounts to nothing. The men I have mentioned and many of their successors have exerted a good influence on medicine because of their characters. Boston medicine has always been respected, trusted and admired. The Boston profession has not estimated success by income or by the amount of work a man does, but rather by the kind of work he does. The criteria by which to judge a medical man and his influence are not his income, the number of his patients or the number of operations he performs, and yet in this material age they are the ones too often employed. Boston medical men have always exerted a wholesome influence on medicine, largely through their honesty and their fairness. They have not boasted these qualities nor paraded their virtues. Advertised virtue like innocence too much protested is always doubted. To-day there is too great a tendency to mould professional behavior by rule and by law or by the taking of oaths, instead of by the development of character. You can't make men good by legislation any more than you can make them temperate. Too much is said and thought of the "business side" of medicine and too little thought by those who occupy prominent positions in their profession of the influence which their characters and behavior have on the student and the beginner in medicine. Both profession and laity are too prone to judge character and ability by reading the advertisements. The phylacteries constitute no index to the character which they surround nor are the initials which a surgeon puts after his signature an indication of his skill or judgment. Truly "Man looketh on the outward appearance"—The men of whom I speak had noble characters and great cultivation and when they spoke or wrote their words were effective. They influenced the younger men who succeeded them. One of the things which has kept up the high standard of Boston medicine has been inheritance, the father-to-son type, which has been so evident throughout the history of Boston. What city can boast such generations of medical men as represented by the Jacksons, the Warrens, the Bowditchs, the Bigelows, the Shattucks, the Cabots, the Richardsons, the Porters, the Ho-

mans, the Mixters and the Cheevers? The business of keeping high and clean the ideals of medicine has passed from father to son and has exerted an influence far beyond Boston and Massachusetts.

The Massachusetts General Hospital, through its founders, James Jackson and John Warren, early set a high standard and from the beginning any report or record of work coming from it has commanded respect. I have had a connection during all my professional life with a similar institution, a little older and just as honorable, the Pennsylvania Hospital, and its influence, though subtle and intangible, has been the most dominant of my life. I have read and heard what many of you men who have served the Massachusetts General Hospital and come under her influence have said of her and I can assure you the feeling you have, to some extent at least, is shared by all American medical men. You love the institution, we admire it. Its influence was in the beginning great and good and it has remained so, largely through the character of the men on its staff.

I have been interested in comparing the inscription on the corner stone of the Massachusetts General Hospital with that of the Pennsylvania Hospital. The latter reads as follows:

IN THE YEAR OF OUR LORD
MDCCLV.
GEORGE THE SECOND HAPPILY REIGNING
(FOR HE SOUGHT THE HAPPINESS OF HIS PEOPLE)
PHILADELPHIA FLOURISHING
(FOR ITS INHABITANTS WERE PUBLIC SPIRITED)
THIS BUILDING
BY THE BOUNTY OF THE GOVERNMENT,
AND OF MANY PRIVATE PERSONS,
WAS PIOUSLY FOUNDED
FOR THE RELIEF OF THE SICK AND MISERABLE:
MAY THE GOD OF MERCIES
BLESS THE UNDERTAKING

When I read this on one occasion to a visiting German Physician his comment was, "Tank God it begins mit an M.D. and ends mit an undertaking." The stone of the Massachusetts General Hospital contains the following inscription:

"THE CORNER-STONE OF THIS EDIFICE,
DESIGNED AS A GENERAL HOSPITAL, FOUNDED BY
THE MUNIFICENCE OF THE
COMMONWEALTH OF MASSACHUSETTS, AND OF
MANY OF ITS LIBERAL
CITIZENS, WAS LAID AT THE REQUEST OF THE
TRUSTEES
OF THE MASSACHUSETTS GENERAL HOSPITAL
BY THE GRAND LODGE OF
MASSACHUSETTS
FRANCIS J. OLIVER, Esq. Grand Master,
His Excellency JOHN BROOKS, Governor.
His Honor WILLIAM PHILIPS, Lieut.-Governor,
President of said Corporation, and a most
munificent donor.
The Municipal and Military Officers of Boston
assisting at the Ceremonies:

THIS FOURTH DAY OF JULY, A.D. MDCCCXVIII, AND
OF THE INDEPENDENCE
OF THE UNITED STATES, XLIII.
Anno Lucis 5818."

Your hospital, though it is not so stated began with an M.D., two of them, and as an undertaking it has spread happiness not gloom in this community for more than one hundred years.

I propose now to deal briefly with some of your distinguished medical men who have done their work and passed on leaving behind them an influence which you and we all feel today. I omit the mention of your living men of influence not because they do not deserve it, not because time enough has not elapsed to judge them; but because I came not to praise the present but to venerate your past, and also because did I deal with the living I would but cause them and myself embarrassment by my encomiums.

I wonder how many of you know that the first money given for the Medical School of Harvard was a legacy of one thousand pounds by Doctor Ezekiel Hersey (1770) for the establishment of a Professorship of Anatomy and Surgery? A similar sum followed on the death of his widow and seventeen years later a brother Dr. Abner Hersey left five hundred pounds for the purpose of augmenting the fund. The early endowment of the chair of Medicine was also a gift from a medical man, Doctor John Cumming. These gifts were not large when compared to present day endowments, but they were large at the time and they show the fine public spirit and humanitarianism which characterized your early medical men. Oliver Wendell Holmes in an address at the 100th anniversary of the Foundation of the Medical School of Harvard University tells the following amusing story of the first professor of Chemistry and Materia-medica, Aaron Dexter:

"This experiment, gentlemen," he is represented as saying, "is one of remarkable brilliancy. As I touch the powder you see before me with a drop of this fluid, it bursts into a sudden and brilliant flame," which it most emphatically does not do as he makes the contact. "Gentlemen," he says, with a serene smile, "the experiment has failed; but the principle, gentlemen,—the principle, remains firm as the everlasting hills."

This story calls to mind an ancient one of a country practitioner in North Carolina who having made a diagnosis of dropsy announced that on the next day he would withdraw the fluid from the abdomen. At the time set for the operation he found the sick chamber crowded with the curious and critical females of the neighborhood, but not disturbed he proceeded to demand a wash-tub to catch the fluid and placed it between the legs of the patient who sat upon the edge of the bed, and then thrust with a dramatic stroke, the trocar into the abdomen. But no fluid flowed, nor was a second or a third less certain effort any more successful. The doctor

then with as much dignity as possible, accompanied by unpleasant murmurings among his audience, withdrew his trocar, placed it in its case, rose and announced with the imperturbability of a Dexter, "A most unusual and interesting case!" "Case of what?" demanded one of the doubters. "An unusual and interesting case of dry dropsy," was the reply. Whether this was an early example of the Boston influence I am not prepared to say.

One of the early influential products of the Harvard Medical School was Nathan Smith who began his career with distinction for he was the only graduate in the year of 1790. He later became one of the most influential and respected men in his profession. He founded medical schools, he was the second surgeon in this country to perform ovariectomy (1822) and he was the father of the equally renowned Nathan R. Smith. It is said that Nathan Smith "left no heritage to his children save an honored name," but he left an influence which passing to and through this son was felt from Maine to Mississippi.

The name of Bigelow you have honored in memorials and it is a name known and respected throughout the medical world. Jacob Bigelow's influence on the medical profession was largely due to his rational therapeutics in which proper respect was paid to Nature's efforts to cure disease and in which there was always apparent a good knowledge of the natural history of disease. He has had many followers but he was leader in rational treatment and at a time when the role was not an easy one. It is interesting to read what Samuel D. Gross says of him:

"If he did not discover the philosopher's stone, he taught his professional brethren to think, and gave to the art of medicine a simplicity it never had before. The leading idea of his doctrine was that many if not most diseases, especially the eruptive, are self-limited; that their natural tendency is to spontaneous cure; and that, while the system is struggling under their effects, very little aid is required from the physician, save what relates to food, drink, and hygienic regulations. While not discarding medicines or drugs altogether, he confined himself to the mildest and most simple remedies, such as are calculated to aid, and not to thwart, nature in her efforts at restoration. Such, in few words, were the views promulgated by the Boston philosopher before he had reached his fiftieth year. These views were afterwards embodied in a short tract, which may be regarded as one of the most valuable contributions ever made to medical science. It need hardly be added that these doctrines were slowly adopted by the profession; but their value is now universally acknowledged and acted upon; and they are the more honorable to American medicine because they antedate by several years similar views expressed by Sir John Forbes in his celebrated paper, originally published in the *British*

and *Foreign Medical Review* under the novel and attractive title of *Young Physic*.

These Bigelow principles were early drummed into me by my father who used constantly to say, "Over-eating and over-medication kill more people than disease." And later as an interne at the Pennsylvania Hospital I had the same idea presented weekly by the late Arthur V. Meigs, that therapeutic sceptic who used to say to us, "Gentlemen, my father said often to me, 'Arthur, when you have been in practice ten years you will be able to write all the drugs you want on your thumb nail.'"

In the summer of 1877 Gross made a call on Bigelow which he describes thus:

"My visit to Boston would have been incomplete without seeing Dr. Jacob Bigelow—clarum et venerabile nomen—now in the ninety-second year of his age. For two years he had been blind and had not left his bed; and when I seized his hand, he said, "I cannot see you; but I can press your hand and bid you a cordial welcome." As he lay on his pillow his countenance, calm and serene, with a most benignant expression, denotive of conscious repose and of resignation to the divine will, reminded me of what I had read of some Roman philosopher. I never looked upon a countenance in which dignity and gentleness were so beautifully blended. During the twenty minutes spent at the bedside of this remarkable man—a man to whom our profession is so much indebted for many happy suggestions—it was pleasant to see his venerable wife, a small, delicate-looking lady, only five years younger than himself, sitting near by, listening with profound respect and attention to the words of kindness and of wisdom as they flowed from his lips."

On this same occasion Doctor Bowditch took Gross to call on Dr. Edward Hammond Clarke who was on his death bed. Gross spoke of his paper on "The Progress of Medicine in America during the last Century" and Dr. Clarke replied "I wrote the whole of it upon this couch with the aid of my wife as amanuensis." It is a great pity that the picture Gross gives of these two wives cannot be more generally known, if it were I could say something about its influence on the wives of the doctors of America. I suppose the Boston wives still exhibit these same commendable characteristics, and if they do I should like to broadcast it for the benefit of suffering medical men at large.

With James Jackson, one of the two medical men responsible for the beginning of this institution, you are all familiar and he and his work have been dealt with in many of the *Ether Day* addresses. I can add nothing to what has been said of him but I would like to say something of his nephew J. B. S. Jackson whose character must have been a very interesting one. Born in 1806, graduated from the Harvard Medical School in 1829 when his distinguished uncle was professor of Medicine, he became, nine years

later, Professor of Morbid Anatomy. He wrote little but wielded a great influence and even in his old age Gross describes him as full of professional enthusiasm and of general information. He defines him as "one of Nature's noblemen, modest and unassuming." On his death which occurred within a few days of that of Jacob Bigelow, Gross wrote—

"He had the simplicity of a child and the enthusiasm of the philosopher. He was warm in his attachments, true as steel, an ardent searcher after truth, and a correct interpreter of nature. He had a solid rather than a brilliant mind, and a tenacity of purpose which impelled him to make thorough work of whatever he undertook. His dissecting-room was his constant companion, where he quietly worked out the great problems of pathological science, and laid the foundation of those two great museums of which the profession of Boston is so justly proud, and with which his own name is indissolubly associated. What John Hunter accomplished for morbid anatomy in London, John B. S. Jackson accomplished for morbid anatomy in Boston. Of the microscope he made but little use. He had implicit faith in his scalpel, and was not a little distrustful of the revelations of an instrument which has been productive of vast differences in results in the hands of different observers. Hence histology, which has made such marvelous strides during the last quarter of a century, formed no part of his studies. He belonged to the school of Bichat rather than to that of Schleiden or of Virchow. He accumulated a vast amount of original matter; for Boston and its vicinity, I might say almost the whole of Massachusetts and the immediately adjoining states, were tributary to his workshop. For many years hardly any specimens of interest or importance failed to reach his hands for examination. He thus became, if I may coin a new word, the post-mortemist of all his professional brethren for hundreds of miles around. The vast treasures thus gathered together now enrich the Warren Museum in Harvard University and the cabinet of the Boston Society for Medical Improvement, of which, in 1828, he was one of the founders."

Jacob Bigelow like Nathan Smith was followed by a no less distinguished son with whose fine face every visitor to this hospital is familiar. Henry J. Bigelow probably did more than any one else to make Boston and the Massachusetts General Hospital known and respected throughout the surgical world. He was made attending surgeon at the early age of twenty-eight years and served in this capacity with distinction for nearly forty years. He has left an indelible personal stamp on this institution and his influence I have no doubt is still felt by his successors. He was the type whose impression will not fade and whose influence will stretch well on into succeeding generations.

How can one think of the prominent figures

in Boston medicine without dwelling pleasantly on the lovable Holmes? No medical man in America has ever held the same place in the hearts of those who love good literature. But it is not of his delightful contributions to poetry and to prose that I would think at this moment, but of one great contribution which he made to medicine, a contribution which was largely responsible for the saving of the lives of countless mothers and children in his own time and since. Think of the courage it took to promulgate the idea that puerperal infection was transmitted from one patient to another by the attending physician. And this from a professor of anatomy and a poet! What a stir it raised in obstetrical circles! What abuse it brought on his head! But what little effect the stir and abuse had on Holmes! The same men that ridiculed his ideas also opposed the use of ether and chloroform to allay the agonies of childbirth.

Of the three generations of Warrens and their association with this hospital, everything has been said that can be said, but I may add that each exercised an influence for good far beyond the environs of this institution or this city.

Let us come a little nearer our own time and look at some of the contemporaries of the third Warren.

One of the best surgeons Boston ever produced and one who exerted an influence on surgical thought and practice which extended far beyond the confines of his own community was Reginald Fitz. Oh! I know some of my listeners will think I have made a mistake, but I haven't, for a surgeon, ladies and gentlemen, need not necessarily operate. The performance of operations is only one side and the easiest side of a surgeon's life. The other side and the more difficult one is to know disease, its cause, its manifestations and when it needs to be combated by operative interference and in this sphere of surgery Fitz wielded a remarkable influence. Was it not he who first described appendicitis and recommended operation for its cure? Did he not write one of the best papers on Intestinal Obstruction? Did he not first describe the various forms of Pancreatitis and recommend their rational treatment, surgery? Did he not decri the indiscriminate "exploratory operation" and did he not condemn the performing of operations by the improperly trained and inexperienced? Oh yes, he did everything but operate and surgery is in his everlasting debt. Fitz did as much for the advancement of surgery as Holmes did for that of obstetrics. It is interesting to think of the probable influence of that early pathologist, J. B. S. Jackson, on the young Fitz who taught pathological anatomy for twenty-two years and began its teaching when Jackson was still at the head of that department.

Maurice Richardson's influence on American Surgery was very marked. His modesty in spite of his ability and accomplishments, his honesty

and his judgment are still talked of in surgical circles. His example stimulated everyone coming in contact with him and his honest papers everyone who read them.

The beloved "Johnny" Munro was much like Richardson. He never said anything or wrote anything that one doubted or thought exaggerated. He probably never knew what a good surgeon he was and certainly never guessed the wholesome influence he had on all who knew him. He was known everywhere and everywhere admired. His influence, I am sure, is still felt, not only by those who worked with him or under him, but by all who saw him work, heard him talk or read his papers.

The stimulating influence of "Jim" Mumford I would also mention; his love of medical lore, his interest in his profession, and his charming contributions to medical history. The influence of such characters does not die with them.

One of the most beneficent influences of Boston on American Medicine has been that of the Harvard Medical School. This school was the first to appreciate the importance of a proper premedical education, the first to raise its admission requirements and the first to extend the medical course from two to three years and then from three to four years. These advances in education were promptly followed by the good schools of the country and later forced upon all schools who would be considered of the first class. In this connection I should like to take occasion to express the gratitude the profession will ever owe to President Eliot for what he has done for the advancement of medical education in America.

It will be obvious from what I have said that the Boston influence is not entirely due to the accomplishments and achievements, but largely to the character of her medical men, to their honesty, their thoroughness, their frankness and to their inherited and cultivated ethical standards. Medical ethics has always been a troublesome question to the laity, but there is no real reason that it should, as it may be epitomized in the "golden rule." It is just being fair and honest to all men and avoiding questionable methods for attaining success, methods which go unquestioned in the business, financial and diplomatic worlds; but which if employed in the treatment of the sick would make a sorry thing of an honorable profession.

Many years ago I heard a sermon by that great Christian philosopher, John Sparhawk Jones, on "Posthumous Influence," the memory of which still abides. To illustrate posthumous influence he took the story of King Saul's clandestine visit to the witch of Endor at a time when this unhappy King was hard pressed by the Philistines and in sore distress. Needing help from God and man and both being denied him, Saul goes to that unlawful and weird "woman of Endor" and when she says, "Whom shall I bring you

up?" he answers "Bring me up Samuel." Not Abraham, not Moses, not the great Joshua, not the valiant Gideon, but Samuel, whom he knew to be wise and good, who had had the courage in life to admonish and even to berate him; this is the man Saul sought for advice, not the great captains of Israel. Doctor Jones said "one is likely to arrive at junctures of experience, hours of perplexity and crisis, when he feels the need of sounder judgment, a larger knowledge, and a finer wisdom than his own. Every one who has journeyed far into life understands what it is to be tossed by painful doubt, to be impaled upon a dilemma, to vibrate to and fro between opposing alternatives and neutralizing arguments, to be tormented by mental perplexity: no one but knows what this means and what anxiety and suffering it can produce. We often fall into suspension of judgment and an inability to determine the better course. And it is always an unpleasant experience; may even become intolerable if prolonged. At such troubled times the natural refuge and spontaneous movement of the mind is to fly to the cover of a ripper wisdom and experience, the tact, intuition, judgment of a larger mind, or at least of one who commands confidence and who seems to know and to be able to point the way out.

This, I say, is the natural refuge of those who doubt and are sorely perplexed, the advice of one who has already traversed similar tracts, or who is able to look upon the situation judiciously and dispassionately and deal with it upon sound general principles." He is describing a moral situation but his words depict very well the dilemma in which medical men constantly find themselves and I have thought their conduct in these situations would be much the same as that of Saul, they would have the help and council of the wise, the good, the strong, the honest man, the man of judgment. They would not care for him who had the most lucrative practice, the most brilliant operator, the man who in his day cut the widest swath, but they want an upright, downright, outright, honest-to-God Samuel, and they find him, not through some modern wizard of Endor, but on their bookshelves, in his writings, in his honest reports of his mistakes and errors and in what others have written of his life and character. Oh, I tell you, the Jacksons, the Warrens, the Biglows, the Fitzs, the Richardsons exert a posthumous influence. May Boston continue to breed such Samuels and future generations will continue to "call them up" and future medicine will be the better for their posthumous influence.

THE PHYSICIAN, STUDENT AND MEDICAL SOCIAL WORKER*

BY GEORGE R. MINOT, M.D.

ONE of the great advances of the age is the recognition of man's responsibility towards his fellow human beings. Contrast the indelible stain of man's inhumanity to man on the East Coast of Africa a century and more ago. Professor Francis G. Peabody has spoken of man's progress in the following words: "The most remarkable discovery of the present generation—more characteristic of the present age than the telephone or the automobile or aerial navigation—is the discovery of the Social Conscience; the unprecedented activity of social responsibility and social service, the new definition of duty in terms of social obligation and social redemption." The stimulus Professor Peabody gave me and many others while taking his course for undergraduates in Harvard College nineteen years ago caused me to write at that time a thesis entitled, "The New Social Work at the Massachusetts General Hospital." Compare that unpublished report with one written today and it will show that the progress in this work has been enormous. The importance of understanding the social needs of the sick and the development of medical social service will remain always a monument to Dr. Richard C. Cabot, Miss Ida M. Cannon and the Massachusetts General Hospital. Somewhat earlier

than the work here, "class work" had been attempted in Edinburgh, and through Osler's influence in Baltimore, and one must appreciate that the fundamental basis of the modern work has been set forth for generations.

Linaere, Sydenham and Gregory, among other illustrious physicians, recognized the fact that taking care of the patient meant much more than simply treating his disease. It was not uncommon in Linaere's day, the late fifteenth century, to find a close affiliation between the clerical and medical professions, some men being members of both. This in part was done to aid mankind. Similarly in the modern social program the work of the churches approaches that of the hospitals, and while duplication may occur it must be avoided. Such activities as those of Mrs. Hoyt of New York are to be commended, aiming to help, not wholly to give. The close contact between clergy, social workers and physicians is for the best interest of the prevention and cure of disease.

In the twentieth century medical knowledge has advanced by leaps and bounds and the ways and manners of the practice of medicine have changed and still are changing. The amount that can be done for a sick person and to prevent disease is now very great and requires much time and thought. In this work the trained student of medical social problems

*An address delivered November 4, 1925, at a meeting to mark the twentieth anniversary of the Social Service Department of the Massachusetts General Hospital.

must not only take a part, but play an important role; one with increasing opportunities to contribute to the benefits of mankind. The subdivisions of the clinic have multiplied with a tendency to neglect the personal influence of the physician and the art of medicine, so well understood by the family practitioner of the older generation. This aspect of medicine, the understanding and the development of the art, has become a most important part of the social worker's duty, but it must always remain a requisite for the practicing physician. In fact to practice medicine is to understand people and the fundamental laws that govern bodily functions. This may be done for the benefit of one individual by the efforts of several, but no success will be gained or purpose accomplished unless they all work together closely. Both physician and social worker must cooperate carefully, both must understand the complete problem the patient presents. The former must direct, but the latter must be well informed upon the medical aspects of the case and carry out in detail the plan decided upon for the patient.

A close personal relationship between doctor or social worker and patient is essential and often it is the social worker who must make the important personal contact between patient and physician, rather than the doctor himself. In so doing she applies the art of medicine which the physician today so often delegates to her in order to conserve his own time for duties for which he is especially qualified.

Clinical medicine is to be looked upon as an investigative science; one which deals with a body plus a personality. The patient is the centre of all and each one presents a problem to be investigated. This does not mean a person is to be studied by only technical processes but by intellectual ones and as a human being, not as a case. The physician and the social worker must be students of men. One cannot hope to succeed with people whose interests and opinions are not understood, or as Samuel Johnson made Rasselas say "I could not hope to move those with delight or terror whose interests and opinions I did not understand." The adviser must never forget the uniqueness of each human being. He must not judge others in the light of himself. Extensive knowledge and experience is required to have the proper power to imagine himself completely in the place of the persons he advises. To interpret another's life is difficult and infinite tact must be used to convince and persuade. The solving of social problems necessitates study and much more than simply a desire to help. Sheer kindness of heart is not sufficient. Too often one finds lack of imagination and understanding in the efforts to direct others how to help themselves, and yet to understand patients "one must be acquainted with

the stream of the world's thoughts and feelings and with the infinitely varied products of the human imagination." Facts as they are obtained must be properly interpreted and not used alone. With proper interpretation, they become significant elements in human life. Thus thinking clearly, with the spirit of inquisitiveness and use of the imagination, is the keynote to the successful care of the patient by the physician and all those who work with him, to prevent, to cure and to alleviate disease.

Medical sociologists like physicians must apply investigative methods and appreciate clearly the significance of "The Control." They thus advance knowledge concerning social science and produce well formulated written books and papers.

Medical social work not only aids in the prevention and treatment of disease, but can be the source of fundamental diagnostic and prognostic data—a fact too often, I fear, forgotten by the physician. For instance, a boy of 19 years of age, recently diagnosed "ulcer of the stomach," was about to undergo a surgical operation. By chance it was learned that a social worker knew the family. She studied the case and reported finding in a closet 78 different medicines which the boy had accumulated and that he was taking one or more doses of 10 to 15 different drugs a day. Stated briefly, the result of this discovery caused the diagnosis to be changed, operation to be avoided, and led to the boy's complete cure in less than a month—accomplished by the proper contact between social worker, doctor and patient.

The physician must be confident that the social worker understands the special aspects of a given case and if such is not so failure ensues. Special knowledge for those working with certain diseases is essential, but specialism must not lead to narrow views. For example, a rather extreme instance is as follows: A social worker stated, "Oh, yes, I understand all the aspects of cancer." She found a patient being treated with some colored light by one whom she later learned was a quack. However, at the time she believed this therapy was quite as satisfactory as the roentgen-ray treatment advised at a hospital. As the patient lived near the "quack" and at a distance from the hospital, the social worker considered it was quite proper for the patient to continue with the "quack." Her belief was due to the dramatic influence of the "sales method of propaganda." After some time she reported to the physician regarding the patient but not until after his tumor had grown considerably. This only illustrates further the necessity for close cooperation between the doctor and his associates and that the purer medical aspects of a case must be dealt with by the physician and never by the social worker.

Medical social work has been a topic neglect-

ed in the teaching of medical students. The responsibility of properly informing them about this aspect of medicine is being recognized here at Harvard more clearly each day. This new development is a distinct advance, for medical social work will progress as fast as physicians are enlightened. It is important that the student obtain this type of information early in his clinical training, so that he will look upon a patient as a human being with a personality and not as a case with interesting physical signs. Thus early he views the patient as a whole rather than as a pair of lungs or some other special organ that he may be studying. Medical students must take advantages of their opportunities to obtain a personal relationship with patients, by so doing they are enabled to arrive at a correct diagnosis and be in a position to treat the sick efficiently. In hospital practice students are often the first to interview a patient regarding his health. The statements people make about themselves are often more accurate when told for the first time than when repeated on a subsequent occasion after much questioning by numerous persons. This is because after one has been asked for certain information he unconsciously formulates ideas regarding the answers he should give, which then may become not quite in accordance with the facts. Medical students are put in a position to obtain, more clearly and accurately than those who follow them, the patient's history with a precise understanding of the sociological and psychological aspects of the case. Thus their opportunity to help the patient is a very real one and by conferences with the social workers they can assist in devising plans and at the same time learn much from them regarding the care of patients.

The student nowadays has opportunity early in his medical course to hear lectures pertaining to the social aspects of medicine, while those working at the Massachusetts General Hospital in their fourth year have valuable conferences on cases with Miss Cannon, Chief of the Social Service Department. Likewise at the Boston City Hospital students under Dr. Francis W. Peabody, as a result of his activity and the helpful cooperation of Miss Farmer, are given valuable instruction in the social aspects of cases. The objects he has in view are given in a re-

cent paper*. The younger medical teachers, instructing small sections of students appreciate more and more the importance of the subject and thus present to the student the social aspects of their patients at the time, all other matters pertaining to a case are discussed.

Recently, I had the pleasure of taking up this phase of medicine with a group of twenty second year medical students. A case was presented where the diagnosis and treatment hinged upon a complete understanding of the patient's environment, daily life, and dietary habits. This patient suffered from chronic indigestion due to improperly cooked food, aggravated by no exercise, no leisure hours, and a lack of understanding between him and his employer, children and landlord. At the end of the exercise these young men, who had had no clinical experience, appeared surprised that no drugs were ordered, that there were no abnormal physical signs, and that laboratory examinations were negative in spite of the man distinctly suffering. How important for them to recognize early in their careers this type of illness, one so very common, and one to be alleviated by properly chosen words and plenty of time giving detailed directions which the patient must follow continually. They also must appreciate that the cure of such a condition can be enhanced by the close affiliation and combined work of the doctor and medical social worker. The future should see more instruction of medical students in social problems and their contact with social workers as well as those understanding public health problems can be profitably increased. In turn, social workers must become more definitely students as well as practitioners of the art of medicine.

The promotion of science and art is for the progress of civilization and the second aphorism of Hippocrates is one for daily practical application—"Not only must the physician attend properly to his own duties, but he must see that the patient, the attendants and all the external conditions are properly ordered". The work of the apothecary has diminished while the responsibility of the nurse, the public, the teacher of medicine, and the social worker has not only developed but constantly is increasing.

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DIABETES, INSULIN AND PREGNANCY

BY REGINALD FITZ, M.D., AND WILLIAM P. MURPHY, M.D.

From the Medical Clinic of the Peter Bent Brigham Hospital, Boston

INTRODUCTION

Joslin, Root and White¹ have recently discussed a medical problem of very great sociological and clinical interest: Will diabetic children treated with insulin grow and develop, or

will they form a stunted and non-maturing section of society?

The answer to this question is still somewhat unsettled, although as the cases of Joslin, Root and White illustrate, the gain in weight of dia-

betic children treated with insulin may resemble that of normal children, the increase in height of diabetic children treated with insulin, though usually subnormal, may occasionally resemble that of normal children, and the sexual development of diabetic children treated with insulin appears assured. As evidence for this last assertion they state that the appearance of the boys under their treatment has so changed as to leave little doubt as to their having ma-

thirst, and one month previously rapid loss of weight and strength. She finally gave up work and entered the hospital for treatment. The physical examination was normal. The urine contained 4.2% of sugar and the fasting blood sugar concentration was 240 mgms. per 100 c.c. of blood. She has been seen at fairly frequent intervals during the past three years. The most interesting data in regard to her case are tabulated.

TABLE 1
THE INFLUENCE OF INSULIN ON MENSTRUATION AND FERTILITY

Date	Weight Kg.	Insulin Units per day	Remarks
October, 1922	53.4		Last menstrual period 2 weeks ago.
December, 1922	51.8		No menstruation since last note.
March, 1923	45.2	10	" " " " "
May, 1923	47.6	10	" " " " "
October, 1923	44.0	40	" " " " "
November, 1923	53.0	40	" " " " "
December, 1923	54.0	40	" " " " "
February, 1924	55.4	40	" " " " "
April, 1924	59.4	40	" " " " "
July, 1924	60.0	40	" " " " "
October, 1924		40	Menstruation returned.
February, 1925	64.4	40	Regular menstruation since last note.
June, 1925	58.2	40	Became pregnant two months ago, but miscarried as the result of a fall. Diagnosis of pregnancy established by histological examination of uterine curettings.
September, 1925	62.0	40	Regular menstruation since last note.

tured, while no girl unaided by insulin has ever, in their experience, developed menstruation after the onset of diabetes, yet since the use of insulin four of their girl patients have begun to menstruate for the first time. Other clinicians, such as Allen and Sherrill², and Campbell and Macleod³ have also reported the development or recurrence of menstruation under insulin treatment.

This paper records the case of a young woman with diabetes who had a return of menstruation under insulin treatment after nearly two years of amenorrhoea, and who finally became pregnant, thus establishing the fact that diabetic girls may not only have a return of normal menstruation under insulin after a long period of amenorrhoea, but may also become fertile.

REPORT OF CASE

M. McL., a white waitress, aged 23, was admitted October 17th, 1922, to the Peter Bent Brigham Hospital, because of diabetes. Her health had always been excellent, except for a few minor infections. Menstruation began at 13, was regular, rather profuse and somewhat painful. Her last period was about two weeks before entry.

Three months previously she first noticed vulval itching and dysuria, two months previously she developed polyuria and excessive

COMMENT AND CONCLUSION

From October 1922 until October 1923 there was a weight loss of 9.4 Kg., despite seven months' treatment with small doses of insulin. Although it was possible to keep the urine sugar-free on so low a diet as the progressive weight loss entailed, such treatment seemed to make the patient unnecessarily uncomfortable and, moreover, was uneconomical because while the patient was living at a low rate of nutrition she felt weak, developed minor infections easily and found it almost impossible to work.

Since October 1923, or for practically two years, a radical change in the policy of treatment has been followed. We have advised the patient to take relatively large doses of insulin each day and to eat a high calory diet excluding little else than desserts, sugar, bread, and any large quantity of such starchy foods as potato, rice or corn.

This change in plan of treatment has been accompanied by a striking gain in weight, a return of normal sense of well-being and strength, and eventually by a return of normal menstruation. It is noteworthy that amenorrhoea should have persisted even after a year's liberal dieting and gain in weight, or that normal menstruation should have re-appeared after two years' absence.

Finally, the patient became pregnant. Unfortunately the pregnancy was terminated by a miscarriage. However, the fact that pregnancy was possible in a diabetic patient known to have had suppression of menstruation for two years is remarkable, and bears out the optimistic view of Joslin, Root and White that clinical, therapeutic and pathologic evidence sets no bounds to the future of the diabetic

child treated with insulin. It may also serve as a practical answer to one of the many questions which confound doctors having in their care young diabetic patients.

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SACRAL ANESTHESIA

BY EDWARD J. OTTENHEIMER, M.D.

THOUGH sacral anesthesia is being generously considered in current literature it may be instructive to report some observations, and, necessarily, deductions, based upon a series of 111 cases which represent a fairly wide range of operative surgery. For the most part the cases are from the Massachusetts General Hospital while the remainder are from O'Neill's Clinic in Willimantic.

In the series which is presented in the accompanying table, there were 15 failures and we have considered as failures those cases in which either no anesthesia was obtained, or cases in which the anesthesia was only partly efficacious, some form of supplementary anesthesia, local or general, being required to complete the operation. The percentage of failures was thus 13.5.

In discussing the factors which seemed to contribute to the unsuccessful anesthetics there are three points that invite elaboration: (1) preliminary preparation; (2) quantity of fluid injected; (3) faulty technique.

The first point, that of preliminary preparation, merits more than passing attention. With sacral anesthesia, as with all varieties of local anesthesia, the surgeon has to cope with the particular mental state of a particular individual. The more phlegmatic of patients may be capable of undergoing an operation with estimable equanimity though the preliminary narcosis be slight, provided the sacral anesthesia be effectual. But the patient who is restless and apprehensive can turn a successful sacral anesthesia into an annoying failure if the preliminary preparation has not been efficient.

The procedure which seemed most effective in this series was a modification of the Schlimpert preliminary narcosis. The night before the operation the patient received veronal gr. x in hot milk. If the operation was to be done at 9 A. M. the patient received morphine sulphate gr. 1/4 and hyoscine hydrobromide gr. 1/150 at 7 A. M. At 8 A. M. morphine sulphate gr. 1/6 and hyoscine hydrobromide gr. 1/150 were given and if any nervousness was apparent during the operation there was no reluctance to giving more morphine. With this method the patient was apt to sleep through the entire operation and often

upon awakening, could recall only vaguely, if at all, his visit to the operating room.

The second point, that of the quantity of fluid, invokes a question about which, as a study of the literature reveals, there is no little difference of opinion. Labat¹ for example recommends 30 to 40 c.c. of a 2% solution of novocaine. Thompson² advises 30 c.c. Farr³ gets his best results with 90-120 c.c. of a 1% solution. Mocquot⁴ uses 15 to 20 c.c. of a 1% solution to which sodium chloride and sodium bicarbonate are added. Schlimpert and Schneider⁵ use 50 c.c. of a 1% solution to which sodium bicarbonate and sodium chlorate are added and find this quantity suitable for their gynecological and obstetrical work. Harris⁶ employs 30 c.c. Meeker and Scholl⁷ advocate 50 to 75 c.c. Haines⁸ uses 60 c.c.

While it seems fairly certain that 30 to 50 c.c. of a 1% solution of novocaine are sufficient to produce adequate anesthesia for many of the genito-urinary and rectal operative procedures this amount does not allow for the more extensive operations which can be done safely under sacral anesthesia.

In this series the best, and most consistently successful anesthesia was obtained with 90 to 100 c.c. of a 1% novocaine solution and there were no untoward effects observed from this amount. We are inclined to infer that large quantities of a weak solution are superior to smaller quantities of a more concentrated solution, particularly if a high anesthesia is indicated.

But since it has been well established that there exists a considerable variation in the capacities of sacral canals we have adopted a plan whereby the quantity of fluid depends not only upon the extent of the operative procedure but also upon the amount of resistance encountered after the first 40 c.c. have been introduced. The latter is a significant point because if any great resistance is met upon immediately injecting the solution it is quite suggestive that the needle is not in the sacral canal. On the contrary if the resistance becomes very great after 40 to 50 c.c. have been introduced it is injudicious to continue to introduce the solution under extreme pressure. After some experience a certain

amount of proficiency may be acquired in determining the relation between resistance and the extent of anesthesia desired.

It seems reasonable to conclude that the safety with which relatively large quantities of a weak novocaine solution can be tolerated within the epidural space has three salutary advantages. First, it makes possible a higher percentage of successful anesthetics; second, it often obviates the necessity for combined sacral and parasacral injections; third, it allows a wider range of surgical procedures especially those requiring low abdominal incisions.

In the third point, that of faulty technique, the answer to the majority of unsuccessful sacral anesthetics may be found. It is probably true that in rare instances, as other writers intimate, a sacral anesthesia fails ignominiously when the surgeon feels reasonably convinced that his technique has been above reproach. By far more frequently however the failures obtain in cases in which he feels dubious as to whether or not the needle is in the sacral canal.

It is not intended here to go into detail concerning the technique of sacral anesthesia about which much has been written. But we do wish to emphasize the fact that the ability to insert a needle accurately into the sacral canal is the master key to consistently successful results. Unfortunately, and unlike lumbar puncture for spinal anesthesia, there is no conclusively confirmatory evidence of the correct position of the needle. But after some practice in properly delineating the sacral hiatus, the puncture of the sacrococcygeal membrane and the angular deflection of the needle become quite simple.

It may be noted that in the series under consideration there were nine cases in which sacral anesthesia was employed for the repair of inguinal hernia, three of which were bilateral. That the belief that the ilio-inguinal and ilio-hypogastric nerves can be anesthetized epidurally is not widespread is apparent from the paucity of literature on the subject. In not one of these nine cases was it necessary to supplement the sacral injection with either local infiltration or inhalation anesthesia. The ilio-inguinal and ilio-hypogastric nerves, as well as the peritoneum of the sacs were in all cases completely anesthetized.

The success of these cases leads us to suggest that sacral anesthesia might be used more frequently for the repair of inguinal herniae on patients who because of age or general condition appear to be poor operative risks. The amount of shock entailed compared to a general anesthetic is negligible. The tendency to post-operative hematomata resulting from the temporary hemastasis of adrenal and tissue edema with local infiltration is avoided. Its superiority to spinal anesthesia needs no elucidation since the latter has been shown in practically every clinic

to be accompanied by considerably more shock and a uniformly higher mortality.

Since the vast majority of cases of sacral anesthesia in the literature is concerned with genito-urinary and rectal surgery it may be interesting to note the operations upon the extremities in this series successfully performed under sacral anesthesia. The cases include an amputation of the leg, an excision of varicose veins and a Mayo operation for bursitis of the metatarsophalangeal joint. The excellent anesthesia obtained in these instances makes it seem likely that sacral anesthesia may be employed advantageously in not a few operative procedures upon the extremities when the patient does not seem to be a happy candidate for a general anesthetic.

By way of summary the importance of mastering the technique of the sacral injection cannot be overestimated. 90 to 100 c.c. of a 1% novocaine solution seems to give more consistently successful sacral anesthesia than smaller quantities of a more concentrated solution. Sacral anesthesia may be used to advantage in repairing herniae when the patient is a questionable surgical risk. Its use may be extended to more operative procedures of the extremities.

SACRAL ANESTHESIA

	Cases	Fail-ures	% Fail-ures
C. and C. for hemorrhoids	46	9	20%
Fistula in ano	16	3	19
Inc. and drainage of perineal abscess	5	0	0
Dilatation of anal sphincter	4	0	0
Bilateral hernia	4	0	0
Inguinal hernia	5	0	0
Pilonidal sinus	3	0	0
Cystoscopy	3	0	0
Excision of coccyx	2	1	50
Litholopaxy	2	0	0
Supra-pubic cystotomy	2	0	0
D. and C.	2	1	50
Excision of perineal cancer	1	0	0
Repair of rectal prolapse	1	0	0
Whitehead operation for Ca of rectum	1	0	0
Repair of cystocele and rectocele	1	0	0
Mayo operation for bunion	1	0	0
Plastic vesico-vaginal fistula	1	0	0
Excision of varicose veins	1	0	0
Amputation of leg	1	0	0
Excision of ovarian cyst	1	0	0
Appendectomy	2	1	50
External urethrotomy	1	0	0
Prostatectomy	1	0	0
Inc. and drainage of periurethral abscess	1	0	0
Curettage of anus	1	0	0
Hydrocele	1	0	0
Lap. for T. B. peritonitis	1	0	0
	111	15	13.5

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ON NITROUS FUME POISONING

BY WILLIAM F. BOOS, M.D., PH.D.

IN a recent general paper on certain industrial poisons* I spoke briefly on the action of nitrous fumes. In the present paper I shall deal more in detail with nitrous fume poisoning which, because of its insidious character, is one of the most dangerous forms of industrial intoxication. It occurs more frequently too, than is generally known; but because the initial symptoms are often relatively slight, serious cases of poisoning from this cause sometimes escape recognition.

Light cases of exposure to nitrous fumes may recover quickly without showing any serious after effects; it is not unusual, on the other hand, for workers—whose exposure appeared at the time only moderate—to die a few hours after the accident. In other words, it is practically impossible to predicate beforehand which case of nitrous fume inhalation is going to recover, and which case is going to develop pneumonia or even—going to die.

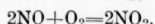
Nor is it to any extent, a question of the worker's previous condition, because the cases of death which I have seen all occurred in rugged men who were enjoying excellent health at the time of the exposure. Individual resistance seems, however, to play a part in determining the outcome of the case, because frequently a more or less anemic and weak-looking individual will come through alive when his more robust fellow worker, who was exposed to exactly the same condition of nitrous fume inhalation, dies as the result of the exposure. These facts show clearly, I think, that it is very vital not to take a chance, but to give all cases of exposure to nitrous fumes immediate and adequate prophylactic treatment.

The exposed worker himself may, however, be the greatest obstacle to proper prophylaxis because he often feels so well, comparatively speaking, that he is apt to scorn the treatment and to go immediately home; only there to develop, perhaps, very serious symptoms. And it is particularly the employe who has been frequently exposed to minor fume poisoning without suffering serious consequences, whom it is hard to convince that the present exposure may be the one that will carry him off. Obviously, therefore, the education of employes concerning the treacherous character of nitrous fume

poisoning forms one of the most important elements in the prevention of fatal accidents.

The prophylactic measures, which I shall describe later, are very simple, and since they may be applied without causing the employe to lose time from his work, and since they act to prevent serious consequences in one hundred per cent of the cases, employes should be forced to have recourse to them.

The active poisonous ingredient of nitrous fumes is nitrogen dioxide (NO_2), a gas having acid properties. It is formed in most cases from the monoxide, a colorless, insoluble gas, which is generated whenever nitric acid is acted upon by reducing agents such as metals or organic compounds. After its formation the monoxide (NO) immediately combines with the oxygen of the air to form NO_2 ;



In the presence of the air, nitrous fumes therefore never contain NO .

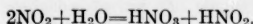
NO_2 is a reddish brown gas with the odor of strong nitric acid. Its odor and color being also much like those of bromine, laymen often find it difficult to distinguish between the two.

When NO_2 is first inhaled it produces a sensation of pain, burning, and choking in the throat and chest. The victim coughs violently and raises yellow-tinged sputum. The pain in the chest may be very severe and there may be headache and dizziness. If the worker is exposed suddenly to nitrous fumes in great concentration, as is apt to be the case when a nitro "boils over," he may be overwhelmed to such an extent that he loses consciousness. But cases of such severity are rare and the great element of danger lies in the very fact that the initial symptoms are usually comparatively mild and entirely out of proportion to the severity of the intoxication which often occurs later in untreated cases. In most instances the first attack of coughing and pain in the chest is soon relieved in the open air. As a result, the exposed worker begins to feel progressively better, and after a half hour or so he thinks he is well enough to go home, when, as a matter of fact, the real poisoning may be just beginning to take effect.

This interesting and dangerous phenomenon is to be explained as follows: At first there is violent irritation from the fumes themselves. Then, little by little, the NO_2 is absorbed by the moisture of the respiratory tract and is con-

*Transactions of the 14th Annual Safety Congress, Cleveland, O., 1925, and Boston Medical and Surgical Journal, Vol. 193, p. 757.

verted into a solution of nitric and nitrous acids:



This acid solution is not nearly as irritant as the NO_2 gas itself and consequently the exposed worker feels considerable relief from his first symptoms. But while the NO_2 chokes the victim at once, the acids formed on the mucous membrane of the respiratory tract, acting more slowly, produce in time a generalized hyperaemia, and in its wake there occurs an extensive extravasation of serum into the alveolar spaces and bronchioles, constituting, in other words, a progressive oedema of the lungs. At the end of, say, an hour the oedema begins to produce symptoms; the cough returns, dyspnoea develops, the victim breathes more and more rapidly, becomes progressively more and more cyanotic, and in a large percentage of cases, finally dies of asphyxia. A certain number of victims recover from the initial oedema only to develop broncho-pneumonia.

The following cases will serve to illustrate the insidious character of nitrous fume poisoning.

The T. N. T. plant of a munitions factory had blown up and the nitrators remained coverless exposed to rain and snow. No attempt was made to rebuild the plant, but after several months had passed, it occurred to the superintendent of the factory that the nitrators contained much valuable T. N. T. which should be recovered. For this purpose a number of men, armed with picks and shovels, were lowered into one of the nitrators. While some of the men broke up the cakes of T. N. T. with the pick, the others shoveled the pieces into buckets which were lowered to receive them. After the men had worked for some time they began to cough, so the foreman had them come up out of the nitrator and told them to go to the plant hospital for treatment. All but two of the men did so. One of these two, D., a big powerful chap, said that he was feeling all right again and didn't want to bother about being "pumped out" (as he called it), but wanted to go right home, a distance of about two miles. The other one, W., also a muscular, well-built fellow, insisted that he, too, was all right to go home. This man lived fully three miles from the plant. The foreman tried his best to detain them for the treatment but they simply laughed at him and went their way.

About an hour and a half later a physician received a hurry call to see D. The doctor found him in bed coughing and choking and very cyanotic. Realizing the man's serious condition the doctor had him immediately removed to the hospital. The patient died in the course of another hour or so, in spite of all efforts to save him.

The next evening a physician was called to attend W. This man was found to have developed a severe broncho-pneumonia. He finally recovered. None of the treated men were taken ill.

The autopsy on D. showed that he died as the result of oedema of the lungs and asphyxia.

It is interesting to note that the nitrator in question had not been in use for months and that it had repeatedly both snowed and rained into it. In spite of this the bottom was covered by a layer of heavy NO_2 fumes and when the men stooped to shovel the pieces of T. N. T.

into the receptacles they were obliged to dip their heads into the stratum of NO_2 .

An employe in a chemical manufacturing plant was ordered to clean out a sump containing spent nitric and sulphuric acids. Before the man was sent into the sump a quantity of slaked lime and water was thrown haphazard into it to neutralize the free acids. The man worked in the sump for about twenty minutes; then he began to cough so badly that he had to come out. He was allowed to go home. A few hours later he was dead. The autopsy disclosed oedema of the lungs and asphyxia.

A workman in a picric acid plant was gassed by the boil over of a nitrator. The open air revived him in a short time and, as it was the closing hour, he started for home. The next morning he was found dead by the roadside. The autopsy again showed oedema of the lungs.

A colored employe in a dye works was working in a hut which adjoined the nitrating plant. For some reason nitrous fumes were liberated in the plant and the colored worker was asked if he had suffered from the fumes. He said no, that he was all right, and he went home. In a few hours he was dead.

An employe in the diazotizing plant of a chemical factory was forced, because of NO fumes, to leave the plant repeatedly for a breath of fresh air. When he went home that night he was coughing badly and was raising a considerable amount of yellow sputum. The next day he went to work, but he looked so poorly and was coughing so much that the foreman sent him home and notified the doctor. That night the patient developed broncho-pneumonia and a few days later he died.

Investigation of the case showed that there had not been any diazotizing for three days and yet the fumes of NO were still present in the closed room in sufficient concentration to cause pneumonia and death.

When the oedema is present, it is too late to do anything except to give cardiac stimulation, use oxygen, or apply other purely symptomatic measures and when a victim pulls through, he owes his recovery to his own superior resistance rather than to any of these therapeutic aids. If, therefore, there is some prophylactic treatment which will prevent the occurrence of oedema, it is obviously of the utmost importance that this treatment be given to every victim of nitrous fume inhalation.

As we have seen the oedema results from the irritant action of free corrosive acids on the mucous membrane of the respiratory tract, hence any agent which will neutralize the acids at the start, will also effectually prevent the occurrence of the oedema. The ideal agent must, of course, be alkaline in character and it must possess the physical properties of a gas or vapor so that it will diffuse quickly throughout the lungs. There is one agent which answers all these requirements—ammonia gas—and if the victim of nitrous fume poisoning is caused to inhale it, the free acids are immediately neutralized with the formation of harmless ammonium nitrate and nitrite, the irritation ceases, and the victim is out of danger.

If the victim has been overcome, an inhalator may be used but the oxygen or air taken into the lungs must be impregnated with ammonia

gas. To accomplish this it is best to use a wash bottle arrangement (such as is supplied with therapeutic oxygen tanks) half filled with the following mixture:

Alcohol, (90%) 55 parts
Ammonium Hydrate, (10%) 22 parts
Ether, 4 parts
Aromatic tincture, 19 parts

The alcohol and ether vapors in this mixture exert a grateful soothing effect and the aromatic tincture accords it an agreeable flavor. If the mixture is not available a 2½% solution of ammonium hydrate may be used instead. The air or oxygen, and personally I prefer air, is made to bubble through the solution or to sweep over its surface.

This inhalation of ammonia gas should be continued for at least an hour before the victim may be considered out of danger. Badly gassed cases should be kept for twenty-four to forty-eight hours under observation in a hospital, with absolute rest in bed; and if the cough, which was allayed by the inhalation of ammonia gas, begins to come back, the patient must again be subjected to the inhalation of ammonia. Aromatic spirits of ammonia, given from time to time by mouth in teaspoonful doses, will help to maintain proper alkalinity of the blood.

The ordinary case of exposure to nitrous fumes does not, however, require such elaborate treatment. All he needs is to sniff ammonia gas for a little while. But since the aqueous solution of ammonia is most inconvenient to handle, I sought for some simple method to employ ammonium carbonate instead. In the presence of the air this compound continuously liberates ammonia gas; but the formation of the gas takes place so slowly that there is never an excessive amount present in the receptacle. I finally came to use an ordinary aluminum salt or pepper shaker filled with cubes of the glassy ammonium carbonate. The employe carries one of these in his pocket and when he gets a "dose" of fumes, he sniffs at the perforated top of the salt shaker. His relief is immediate and there is no danger of his getting too strong a whiff of ammonia. The salt shaker must be kept filled at all times; ordinarily it is necessary to renew the ammonium carbonate about

once in four days. The glassy form of the salt does not evaporate as quickly as the commercial salt.

There are on the market several different makes of friable glass ampoules containing an aromatic, alcoholic preparation of ammonia. These ampoules are wrapped in the necessary absorbent material and are ready for instant use; but since they are rather small, and therefore easily lost, they are not, I think, well suited for the use of the workman himself; for hospitals or first aid rooms, they constitute, however, an excellent emergency source of ammonia.

The thing to bear in mind is that the earlier the victim of fumes sniffs ammonia gas, the quicker he is back in shape. By means of the salt shaker he has constant access to it during his work, and there is, therefore, really no reason why he should at any time be laid up from nitrous fume poisoning; provided of course, he is not subjected to a sudden exposure to fumes in great concentration. When this happens, I repeat, he must receive hospital care for at least twenty-four hours. Then too, the use of the salt shaker by employes presupposes that the plant is equipped with an efficient exhaust system which disposes of most of the fumes, even when boil overs occur. I feel that there should be federal or state laws requiring the installation of such exhaust systems in all factories where nitrating or diazotizing is done or where nitrous fumes are liberated through any other cause. In certain states this matter has, I believe, received attention, but on account of lack of legislation the workers in other states are still exposed to a great hazard from nitrous fumes and poisonous gases in general.

This principal of neutralization with ammonia gas to give relief from fume poisoning applies, of course, to other corrosive acid gases such as hydrochloric and hydrofluoric acid gases, chlorine, bromine, iodine, and sulphur dioxide. In the case of sulphuretted hydrogen it will, of course, prevent the subsequent development of bronchitis or pneumonia, but it will not prevent these sudden rapid deaths which result from a specific action of the H_2S on the respiratory center of the medulla.

NEUROSYPHILIS: EARLY RECOGNITION AND ECONOMIC IMPORTANCE*

BY HENRY R. VIETS, M.D.

THE early recognition of neurosyphilis is often difficult. Its importance in relation to the welfare of the patient cannot be over-emphasized. It is only through early recognition of central nervous system involvement that we can hope to ameliorate the suffering entailed by this form of syphilis and prevent the economic

*An abstract of a lecture given at the New England Health Institute, Portland, Me., May 8, 1925.

waste which so often accompanies chronic illness. It is therefore extremely important to thoroughly understand the pathology of neurosyphilis to enable us to make a prompt diagnosis.

The spirochetes causing syphilis may invade the central nervous system during any portion of the secondary or tertiary period. Involvement during the secondary period is usually slight and without clinical signs, the diagnosis

being made by finding a small increase in the number of white cells in the spinal fluid. Persistent headache during the secondary period should suggest early syphilitic meningitis. Confirmation of the diagnosis by spinal fluid examination is essential.

During the vague tertiary period, from a year to thirty years after infection, syphilis may attack any part of the central nervous system. Fortunately the interstitial elements are usually first invaded. They are the enveloping structures (the meninges), the nutrient vessels and the supporting framework, the neuroglia. Most of the interstitial elements of the central nervous system have some power of recovery. The three types of tissue when invaded by the syphilitic virus respond comparatively well to anti-syphilitic treatment and a favorable outcome may be expected provided that coincident parenchymatous damage has not been done. The parenchymatous elements of the central nervous system have no powers of recovery. It follows, then, that early recognition of neurosyphilis usually means the early recognition of the interstitial types of neurosyphilis.

It is of value to classify the interstitial cases as follows:

1. Vascular cerebral syphilis, apoplectic.
2. Meningitis, syphilitic, basal, acute and chronic.
3. Meningitis, syphilitic, cerebrospinal.
4. Gumma, cerebral.
5. Cerebral syphilis.
6. Meningomyelitis, syphilitic.
7. Myelitis, syphilitic.
8. Gumma, spinal.
9. Cerebrospinal syphilis.
10. Syphilis, central nervous system.

The vascular cases are the easiest to recognize. A cerebral haemorrhage in a young adult, appearing clinically as a hemiplegia, is extremely suggestive of vascular syphilis. The pathological state of the blood vessels is an arteritis, not different from the more extensive changes seen in the aorta leading to aortitis with aneurysm. The cerebral arteritis is often limited to a few vessels and may respond well to treatment, subsequent haemorrhage being prevented. Whatever parenchymatous damage, done by the haemorrhage itself, however, is followed by permanent loss of function. The prognosis in vascular syphilis, therefore, depends largely on the amount of residual paralysis.

Syphilitic meningitis in its acute form has a striking clinical picture, characterized by severe headache, cranial nerve palsies and marked pleocytosis in the cerebrospinal fluid. Intravenous, or in some cases intraspinal treatment, gives a high percentage of cures. In the more chronic forms of basal meningitis treatment is often successful, provided, as in the vascular cases, parenchymatous damage has not been done also.

Cerebral gummata, usually of meningitic origin, may be resistant and require surgical removal. The myelitis cases do not differ essentially from the cerebral interstitial cases. Prognosis is usually good under prolonged treatment.

After lapses of activity of about ten to thirty years, the virus of syphilis may attack primarily the essential or parenchymatous elements of the central nervous system. The usual classification of these diseases is as follows:

1. Paresis (General paresis, general paralysis, dementia paralytica).
2. Paresis, juvenile.
3. Taboparesis.
4. Tabes dorsalis (Locomotor Ataxia, Tabes).
5. Tabes optica.

As recovery of the damaged elements is impossible, one can only hope by treatment to stop the activity of the process, or at least bring about a remission in the symptoms. If one is fortunate enough to stop or check the progress of the disease, the patient's disability may not be too great for him to adjust himself to the environment and remain a useful citizen. This is the aim of treatment in cases, for example, of locomotor ataxia, an end which is accomplished in about two-thirds of the cases, provided treatment is continued for a long period of time. Tabes optica, on the other hand, is very rarely held in check. Paresis, with the newer methods of treatment, has a better prognosis than formerly. A new drug for intravenous use, tryparsamide, and the use of malarial inoculation in paresis are opening up a new field of treatment in a formerly supposed incurable disorder.

In all stages of neurosyphilis lumbar puncture is the keynote to diagnosis, treatment, and prognosis. One cannot rely on the blood Wassermann test alone, which is negative in about 50% of many types of neurosyphilis. Early diagnosis must be made by the examination of the spinal fluid. Treatment must be guided by frequent examination of the spinal fluid. Prognosis depends very largely upon progressive decrease in the laboratory tests of the spinal fluid under treatment.

The economic importance of neurosyphilis is difficult to estimate. Syphilis of the central nervous system accounts for about 10% of the population in the State institutions for mental disease. In a general hospital neurological clinic about 1/5th to 1/4th of the cases have neurosyphilis. Failure of the general practitioner to examine the spinal fluid before entering the hospital and thus make the diagnosis is so prevalent that many cases go on to partial or complete disability before recognition. In these later cases, cures are rarely seen; only six to eight cases that can be considered cured come to mind in the large number seen at the Massachusetts General Hospital. In private practice the percentage is higher.

A large percentage, however, of cases seen in all stages of the disease are helped and if the damage is not too severe, the patients may continue indefinitely as self-supporting citizens. The economic loss, however, in time and money, even with such favorable results, is very large. The patients that make the best recoveries often visit

the clinic or their physician as many as thirty times a year for a period of three to ten years for treatment or examination. Some patients need as many as sixty treatments in a single year, if good results are to be expected. Continued treatment over long periods of time brings cure to a few and amelioration to many.

NEW ENGLAND SURGICAL SOCIETY

GALL BLADDER SURGERY*

BY WALTER C. SEELYE, M.D.

In presenting this paper on gall bladder surgery it is not my object to give an exhaustive treatise, but rather to speak informally of the facts that have impressed me as important in my work along this line. Also I wish to present some statistics of a short series of consecutive cases.

My attention has been attracted by two outstanding facts in the routine of gall bladder surgery, first its frequency, and second its gravity. Cases of gall bladder disease are so common that they comprise a large bulk of the abdominal work of all surgeons. It is a disease of middle life, when cardio-renal and myocardial changes have commonly obtained a footing, and through these or other causes the patient presents herself or himself often as a poor risk for operation. The mere fact of gall bladder disease in itself may well indicate systemic infection to the extent of adding a serious element to the risk. I feel, therefore, that the importance of careful judgment in these cases cannot be too much emphasized. They must have thorough observation. The history and severity of the symptoms should be of great influence in deciding whether the future well being of the patient stands a better chance with, or without an operation. Patients who are poor risks should be held a sufficient length of time to put them in the best possible condition for operation, and no pains spared in the preparation for the same.

The operation to my mind is a serious affair in any event. In the general run of abdominal operations, I am impressed by the fact that the average gall bladder operation is attended by more technical difficulty and danger than most of the other abdominal operations. For this reason it may be in order to mention a few of the principal points of technique that I am accustomed to follow in a typical uncomplicated case. A transverse incision is my favorite. It gives a good exposure and is easily closed. The abdomen being opened and the diagnosis of gall bladder disease established, as a general rule I first remove the appendix, and then proceed to the cholecystectomy. In spite of the recommendations of Deaver and others

to begin at the bottom by tying off the cystic duct, cystic artery, and working upwards, I usually find that I can work to much better advantage by freeing the gall bladder from the liver first. Here it is important to incise the peritoneal coat of the gall bladder and separate it from the mucous coat, stripping it down so that the liver surface is protected and leaves no raw area. The gall bladder once freed, may then be well retracted to facilitate easier clamping of the cystic artery and duct. Upon the stump of the cystic duct I always place two ligatures of strong chromic gut, and carbolize the stump as in the case of an appendectomy. The gall bladder being then removed in this typical case, I close the wound without drainage.

In all sorts of complicated and difficult cases on the other hand, we have to cope with the situation as it presents itself, and work out the technique that will best fit the given case. In this respect we are anxious to do everything possible for the permanent relief of the patient. We know that cholecystectomy is more satisfactory than cholecystostomy, and we don't usually consider doing a two stage operation. I am convinced, however, that I obtained at least one fatality by trying to do too much. In this I persisted in accomplishing a cholecystectomy in an almost impossible case with acute symptoms, empyema of the gall bladder with stones, very marked inflammatory thickening, and considerable hemorrhage. Without an autopsy it was impossible to define the exact cause of death, but it was probably due to shock and sepsis. If in this case a simple cholecystostomy with removal of the stones and drainage had been done, with the view to a cholecystectomy later, after the inflammation had entirely disappeared, I believe the patient would have been alive and well today. In contrast to this was another case with a happier outcome, upon whom I operated as an acute abdominal emergency. There was found a large walled off abscess in the upper right abdominal region evidently from a perforated gall bladder associated also with an abscess in the liver about two inches in diameter. Simple drainage was accomplished and recovery was uneventful. Six months later, owing to recurrent gall blad-

*Read at the annual meeting of the New England Surgical Society, Springfield, Mass., October 2, 1925.

der symptoms, she was again operated upon, and cholecystectomy accomplished of a gall bladder tied up in adhesions and full of stones. She is well and without symptoms today.

Regarding the ducts and duodenum, they must have the greatest consideration on the part of the operator. Any injury to these must be recognized at once. Deaver has emphatically warned us by saying:—"When a duct or ducts are injured accidentally, the condition should be recognized and repair made at once, otherwise a second operation, usually very formidable, will be necessary." One case in my series illustrates this hazard. In clamping off the cystic duct with a certain clamp toothed at the tip, the duodenum was caught in the clamp and perforated. The accident was fortunately immediately recognized and repaired, and the patient made an uneventful recovery.

In looking up a consecutive series of one hundred and six of my own cases from June 1919 to June 1925, I was interested to note that the average age was forty-four, which is exactly the same as that of an earlier series of cases compiled by Dr. Donald S. Adams, two hundred thirty in number, from the general services of the Memorial Hospital from Jan. 1910 to June 1919.

The oldest of my series was a woman sixty-nine. This was a cholecystectomy done with a local anesthetic, supplemented with a very little ether over the part of the operation where the gall bladder was being separated and removed. Her recovery was uneventful, and word received this September, one year and nine months after the operation, reports her in perfect condition. The oldest case of the earlier series was seventy-two. My youngest case was seventeen, which was the same as that of the earlier series.

The deaths of my series were four in number, or 3.77%; as against 5.3% of the earlier series, although my series contained a smaller number of cases.

Of my 106 cases, 97 were women and 9 were men. Cholecystectomy was done in 92 cases, and cholecystostomy in 13, while one had simple freeing of adhesions, there being no apparent justification for removal of the gall bladder. These were all done under general anesthesia with the exception of four, and in two of these the local anesthetic was supplemented by a little ether. It is interesting to note that these four were all over sixty years of age, and the local anesthetic was used because they were especially poor operative risks.

A transverse incision was done in seventy cases, and of these forty were closed tight without drainage. A right rectus incision was made in thirty-three, twelve of which were closed without drainage.

Of the 106 cases, 86 either replied to a form letter sent out this September, or were recently

examined or heard from in person. There were thirteen not heard from. One was reported as having died three years after the operation, and the four fatalities make up the balance. In these 86 that have been heard from or examined this September, only four herniae in the scar have been found. Two were right rectus incisions with drainage, one a right rectus incision closed tight, and one a transverse incision with a large abscess drainage. Nine of the cases report definite symptoms that indicate only partial success. One has a small discharging sinus of four years' duration. She was sixty-two years old with empyema and stones of the gall bladder, a poor risk, and done entirely under local anesthesia. Only a cholecystostomy was done, and it is probably to her advantage that she has a vent in the form of a sinus. The remainder of these nine had indigestion, one very badly, and others only a little, and all expressed themselves as better than before the operation. Of these nine, five were cholecystectomies and four were cholecystostomies.

Two of the series apparently have no satisfactory result. They were both clean cholecystectomies with apparently perfectly satisfactory results upon discharge from the hospital. One of these has had repeated attacks of pain with nausea and vomiting simulating biliary colic, and the other has had a continuation of indigestion and pain suggestive of gastric ulcer which symptoms he had before the operation, and has received no relief. Examination of the stomach at the time of operation proved negative. Further operative treatment on these two cases will probably be necessary in order to obtain relief.

This leaves us with the remaining seventy-two cases, which seem to have had a perfectly satisfactory result, with relief of the symptoms which existed before the operation, with a perfect scar, and no complications referable to the operation. They all reported freedom from indigestion, except a very few had a very slight and occasional indigestion, and a few had occasional headaches or nervousness; but these to all intents and purposes were perfect results.

DISCUSSION

DR. W. IRVING CLARK, Worcester: It seems to me that a mortality of 3.77% with a complete cure of seventy per cent. shows that Dr. Seelye's experience has been extremely satisfactory. I believe that the statistics of autopsy show that ten per cent. of all people have gall stones. Of course the majority of these are silent. It seems to me queer that we don't know much about the etiology of gall stones. We know that there is a chronic cholecystitis accompanying them, and that stasis of bile is an important point, but why there is stasis we don't know; but those are the factors which

cause precipitation of bilirubin, calcium and cholesterol.

The question of cholecystectomy versus cholecystostomy has always interested me. Everybody now is doing cholecystectomy; but I wonder how many cases come in that have had a previous cholecystostomy done and then a cholecystectomy done. It would be interesting if a large hospital could produce records

showing how many cases of cholecystostomy came in for a later cholecystectomy and how many never came back. I feel that we should not uniformly do a cholecystectomy without considering carefully the condition of the patient at the time because of the greater danger of this operation as compared to cholecystostomy with drainage.

No further discussion. Adjournment.

REPORT OF PROGRESS

CHOLECYSTOGRAPHY

A Review of the Literature

BY GILSON COLBY ENGEL

The gall bladder has, for many years, interested the philosophic physiologists; but never was there a keener interest displayed until it was found that the internist as well as the surgeon could drain the gall bladder. At this time the interest became more intense to discover its function. This study has recently been given an added stimulus by the advent of cholecystography.

ANATOMY

The anatomical structure of the gall bladder should first be taken into consideration. The most important features of the anatomy with reference to the function are: (1) The external coat or serous coat which is derived from the peritoneum and entirely covers the fundus, but only covers the under surface of the body and the neck. (2) The Fibro muscular coat which is just under the serous coat and consists of irregularly woven fibrous strands with plain muscle fibres running chiefly longitudinally. (3) The internal or mucous layer which is a mucous membrane continuous with that in the ducts of the liver and which is covered with a columnar epithelium. (4) An excellent lymphatic system. As Mann¹ has said, "The gall bladder seems best suited for absorption and the muscular coat to keep the contents well mixed and to keep the contents in contact with the mucosa."

PHYSIOLOGY

Mann¹ showed that when the gall bladder was removed the ducts, within a few weeks, dilated two to six times their pre-operative diameter. He also noticed that the sphincter of Oddi became more or less functionless following this operation.

Mann and Bellman² showed that jaundice (bilirubin in the plasma) appeared in from twenty four to thirty six hours in animals whose common duct was ligated with the gall bladder intact. While in the same experiment on animals with the gall bladder removed the time was greatly decreased. In some of the latter cases

bilirubin appeared in three hours and always at six hours. From this they draw the conclusion that the gall bladder has the power of concentrating bile at least in the early hours of common duct obstruction. Reus, Peyton, and McMaster³ have demonstrated this point. From this we may draw the inference that the gall bladder is able to remove water and to store all the pigment produced by the body in twenty four hours.

Bellman, Depage and Mann⁴ also showed by the intravenous injection of sodium hypochlorite that a definite cholecystitis is produced; and that when the common duct is ligated the rate of appearance of bile pigment in the blood is directly proportional to the degree of inflammation produced by the chemical.

Mann¹ also showed that the gall bladder had an excretory function, at least for Rose Bengal dye. He injected Rose Bengal dye intravenously and after ligating the cystic duct found that some of the dye was in the gall bladder. The greater portion had been excreted by the liver. Thus we see that the gall bladder at least has the power of excretion for Rose Bengal dye.

Mann¹ draws the following hypothesis for the function of the gall bladder. During the fasting state the liver produces small amounts of bile. Most of this is stored and concentrated in the gall bladder. After a meal, as the acid chyme enters the duodenum, it stimulates the sphincter of Oddi at the ampulla to relax and the gall bladder expels bile. The bile is quickly absorbed and stimulates the liver to produce more bile. The flow to and from the gall bladder during digestion is thus very active. After digestion the sphincter of Oddi opens less frequently and the gall bladder again concentrates bile, only a little being allowed to run into the duodenum during fasting.

CHEMICAL COMPOUNDS USED

As Graham and Cole⁵ wrote in their first paper, since the gastro intestinal tract can now

be studied by roentgen ray there should be no reason why one could not employ similar methods to study the gall bladder. The requisites were to have a drug which should contain a metal which should be fairly soluble, which should be eliminated chiefly in the bile, and which should be exceedingly low in toxicity. These workers started by using the sodium salt of tetrachlorophenolphthalein since this compound had been used in liver function tests and was known to be excreted largely in the bile. The intravenous injection of this compound failed to produce a shadow in the gall bladder. The sodium salt of tetraiodophenolphthalein was next tried because of its similar chemical structure and because of its high iodine content. The results were satisfactory except for its toxicity. Next the sodium salt of tetrabromophenolphthalein was tried with no toxicity but with ill defined gall bladder shadows. These workers next tried the calcium salt of tetrabromophenolphthalein and at the publication of their first paper, in February, 1924, they felt that this was the best compound so far.

At the publication of their next paper⁶ in May, 1924, they were of the opinion that the best method was to use the sodium salt of tetrabromophenolphthalein. At this time they were using, for example, 30 to 40 cc. of solution instead of the 350 cc. required by the calcium salt.

By their next paper January, 1925⁷, they had tried out twenty eight other substances—six of which made the gall bladder visible after intravenous injections. At this time they were still very much in favor of the use of the sodium salt of tetrabromophenolphthalein. Because of Able and Roundtree's work concerning the excretion of phenoltetrachlorophthalein it was thought that almost all the tetrabromophenolphthalein must be excreted by the liver in the bile.

At this time Whitaker and Milliken⁸ came out in the January number of the *S., G. and O.* with an article on The Comparison of Tetrabromophenolphthalein with Tetraiodophenolphthalein. These investigators express the opacity of the two compounds as follows:—

80 (atomic wt. of Br.) by 47 (percentage in salt) = 3760.

127 (atomic wt. of I.) by 59 (percentage in salt) = 7493.

This is seen to be a ratio of about two to one in favor of the tetraiodophenolphthalein. From this they deduced that theoretically it requires 50% less of the tetraiodophenolphthalein salt than the tetrabromophenolphthalein salt, to produce the same density of shadow. As to the toxicity of the two compounds they found no appreciable difference. From these findings they concluded that with reference to cholecystography the tetraiodophenolphthalein compound was by far the better to use.

In April⁹ Graham, Cole and Copher published

an article on sodium tetraiodophenolphthalein in which they defend their first experiment with tetraiodophenolphthalein⁵ by stating that the substance they used was different physically from the tetraiodophenolphthalein that Whitaker was using. They have since obtained a better tetraiodophenolphthalein and now use this compound as the one of choice.

The properties of the sodium tetrabromophenolphthalein are as follows: It is a blue crystalline compound. Its molecular weight is 678. Its pH is between 8. and 10. when in solution. It is possible to make a 40% solution in water with it. It increases in toxicity on exposure to light or air.

The properties of the sodium salt of the tetraiodophenolphthalein compound are as follows: It is a light blue crystalline compound with a molecular weight of 682. A 40% solution in water can be made.

Thus at the present time it is generally accepted that the sodium tetraiodophenolphthalein is the compound of choice to use in cholecystography.

METHOD OF ADMINISTRATION

Graham and Cole¹ in their first paper gave the calcium salt of tetrabromophenolphthalein as follows: "1 gram per kilogram body weight was first given and this was found to produce a shadow. At that time the largest dose to be used was 6. grams. 6. grams of the tetrabromophenolphthalein was mixed in a mortar with 1.2 grams of calcium hydroxide and a few cc. of water. This was then dissolved in from 325 to 350 cc. of distilled water. They also added 2. grams of calcium lactate as this produced a more stable solution and also increased the solubility. It was then sterilized and filtered and given very slowly by the intravenous method.

At the advent of their next paper they² were using the sodium salt of tetrabromophenolphthalein and were giving it as follows: They dissolved 5 to 5.5 grams of the salt of tetrabromophenolphthalein by heating it in 40 cc. of distilled water. This solution was then sterilized and given intravenously in two doses, half hour apart. These doses were given between 7.30 and 9.30 A. M. after the solution had been warmed to body temperature.

Whitaker and Milliken⁸ in their first article used the same dose and method for administering the sodium tetrabromophenolphthalein and in the case of the sodium tetraiodophenolphthalein they used 3.5 grams of the compound dissolved in 50 cc. of water to which 1.5 cc. of a 10% solution of sodium carbonate had been added.

Graham, Cole and Copher⁹ in April, 1925, used sodium tetraiodophenolphthalein as follows: They took 3.5 grams of the compound and dissolved it in 28 cc. of distilled water. This solution was then filtered and sterilized.

It was then injected in two doses by the intravenous method.

The next change in administration was noticed with the publication of an article by Milliken and Whitaker¹⁰ in May, 1925, when these investigators found that .045 to .040 grams of the sodium tetraiodophenolphthalein per kilogram body weight would cast a definite shadow in human subjects. They then made up their solutions by measuring out the amount of the compound needed into a 100 cc. flask. Distilled water was then added to make a 10% solution. This was then administered very slowly, in one dose, by the intravenous method.

In June, 1925, at the publication of Whitaker and Milliken's article¹¹ the method of administration was somewhat revolutionized. At that time they came out with an oral method of administration, which was being tried by Graham, Cole and Copher at the same time. They first used .1 gram per kilogram body weight in a 5% solution with malted milk. This produced shadows in 9 of 10 cases. The 10th case was unable to retain the solution. They next used a pill coated with salol in syrup of tolu. By this method they were able to produce shadows in 93% of the cases of normal subjects tried.

Thus at the present time it seems advisable to use first the oral method and if this fails to show a shadow then use the intravenous method.

REACTION TO THE COMPOUNDS

Graham, Cole and Copher⁹ listed their reactions in three degrees. Their first degree reaction consisted of those patients who suffered either slight headache, vertigo or nausea lasting from a few seconds to ten minutes. Their second degree reaction consists of patients who suffer the first degree reactions for a period of three or four hours. The third degree reaction consists of the patients who suffer nausea, vomiting, backache, slight tachycardia and temporary fall in blood pressure. The following is a record presented in their paper:—

	Na Tetrabrom		Na Tetraiodo	
	Cases	%	Cases	%
No reaction	13	63	18	86
1st degree	4	19	3	14
2nd degree	1	4	0	0
3rd degree	3	14	0	0

Milliken and Whitaker¹⁰ report that in forty cases they had no serious reactions. Three of the patients had headache and one complained of pain in the back. Two of their cases vomited once, one they report in ten minutes and the other in thirty minutes after the injection. Their report shows a much lower reaction than Carmen and Counsellor¹² reports.

Whitaker¹¹ reports a series of cases as follows in a later publication. "Of 44 persons tested by the oral method the results were—27 had no symptoms at all, 5 vomited from one to

three times, 5 had mild diarrhoea, and 7 had slight nausea." These investigators feel that the vomiting that follows the oral administration is due to gastric irritation.

It is now generally felt that the dose that is used at present is not enough to cause one to expect any pathological changes due to toxicity of the compound used. Ottenberg and Abramson¹³ have produced severe liver degeneration by using .3 to .4 grams per kilogram body weight in rabbits who lived about eight hours after injection. On the other hand by using .5 grams per kilogram the rabbits died suddenly and the architecture of the liver was maintained. He used both tetrachlorophenolphthalein and tetrabromophenolphthalein and found little difference in the two compounds with regards to their ability to produce liver necrosis.

There really seems to be no real contraindication for the use of sodium tetraiodophenolphthalein for cholecystography, Whitaker tells us, unless it is in those patients whose general condition would be such that would prohibit any like procedure.

VISUALIZATION OF THE GALL BLADDER

Graham, Cole and Copher in their article under date of May, 1924⁹, gave the following orders to the patient:—

- 1—Omit breakfast.
- 2—Omit lunch (a glass of milk if hunger is severe).
- 3—Take 40 grains of sodium bicarbonate every three hours for forty eight hours, day and night while awake.
- 4—Lie on the right side of the abdomen or be up.
- 5—Take water if desired, by mouth.
- 6—Omit protein from evening meal on day of injection.
- 7—Take roentgen-ray films at four, eight, twenty four, and thirty two hour periods.

At the writing of their paper at that time, they found the following points of similarity in the cases of normal gall bladders studied. "A normal gall bladder will begin to cast a shadow from three and one half to five hours after injection; will show a tendency to change in size; will cast its heaviest shadow between sixteen and twenty four hours, and will empty in about forty eight hours." Pathological gall bladders do not show the ability to distend, neither are their shadows as heavy as a normal since this quality depends on the gall bladder's power of concentration.

In September, 1924, Graham, Cole and Copher¹⁴ published an article in which they listed the criteria of a normal gall bladder. "At about the fourth to the seventh hour after injection a faint but definite shadow appears which is seen to have the contour of the normally shaped organ but to be somewhat larger than

the normal gall bladder seen at laparotomy. At the end of twenty four hours the shadow is much more distinct but is contracted down to about one half of the earlier size. From then on until the forty eighth hour the shadow diminishes in size and fades gradually."

Dr. Sherwood Moore¹⁵ the radiologist, has reported gall bladder pathology, correctly diagnosed in 92.5% of 55 cases which later came to operation where a confirmation of the cholecystographic diagnosis was made.

Milliken and Whitaker¹⁰ in their article of May, 1925, stated that they took films at six, nine, twelve, twenty four and thirty six hours after injection and they drew the following picture for the normal gall bladder. "It begins to cast a shadow at the end of three hours, after the injection of sodium tetraiodophenolphthalein, which reaches a maximum during the six to twelve hour interval and begins to fade in twenty four hours, disappearing entirely in thirty two to thirty six hours. The normal shadow is oval in shape and smooth in outline. It is at first small, swells to a maximum at six to nine hours and then gradually diminishes in extent." After the nine hour film they gave food and noticed a quick reduction in the size of the shadow and thus interpreted this contraction as evidence of the normal gall bladder. These observers report that "9 cases of 20 that have later been submitted to operation failed to show a shadow and at operation 8 of the 9 had an undisputable block of the cystic duct by stone or inflammation." In two patients they reported the finding of negative shadows proved to be cases of gall stones. They summarize the conditions indicating a pathological gall bladder as follows:—

1—Failure to produce a shadow due to cystic duct obstruction or to severe chronic cholecystitis.

2—Gall stones that are not seen in the films but show as "Negative" shadows in the cholecystograms.

3—Failure of the normal expansion and contraction of the gall bladder.

4—Distortion of the shadow due to causes in or around the gall bladder. "According to these methods the diagnosis of pathological conditions of the gall bladder was found to be correct in 95% of the series of proved cases, while the clinical impression was correct in 65%."

SUMMARY

The procedure at the present time is generally accepted to be as follows: Sodium tetraiodophenolphthalein is unquestionably the compound of choice to use for four reasons. 1—It is less toxic than the other compounds, 2—It can be given in smaller quantities, 3—It has a greater atomic weight, and 4—The compound

contains a high percentage of iodine in the salt.

The method of administration is to first use the oral method. .1 gram per kilogram body weight in a coated pill form given in the morning. Give practically no food until the 9 hour film is taken and then give a meal which should cause a diminishing in the size of the shadow if the gall bladder is normal. If the oral method is not satisfactory then use the intravenous method. Take .045 grams of the sodium tetraiodophenolphthalein per kilogram body weight in a 100 cc. flask. Add distilled water to make a 10% solution. This is then slowly injected.

There is a variation of ideas at present as to when the films should be taken. Graham, Cole and Copher⁶ take them at four, eight, twenty four, and thirty two hour periods. Whitaker and Milliken¹⁰ however take films at six, nine, twelve, twenty four and thirty six hours after the injection. This is a matter of choice.

The shadow of a normal gall bladder appears about three hours after injection, and reaches a maximum from six to twelve hours after injection. It begins to fade in twenty four hours and disappears entirely in thirty two to thirty six hours. The normal shadow is oval and smooth. The shadow increases in intensity to about nine hours and when the meal is given the size and density of the shadow diminish remarkably.

The reports of correct diagnosis from the different clinics by the method of cholecystography show exceedingly good and dependable results. Dr. Sherwood Moore¹⁵ reports 92.5% of 55 cases correctly diagnosed, and Whitaker and Milliken¹¹ report 95% correct diagnosis.

It certainly seems then, that cholecystography is now and will continue to be an exceedingly valuable asset in the diagnosis of gall bladder pathology.

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Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 11501

MEDICAL DEPARTMENT

A Swedish teamster forty-two years old was brought to the Accident Room twenty-four years before his final admission. His back and chest had been injured by a falling beam. Examination was negative except for the injuries. The pupils were normal. The urine showed no albumin or sugar. In two weeks he was well except for a little lameness in the back, and was discharged.

August 12, eleven years later, he was referred from the Out-Patient Department complaining of dyspnea. He now said his mother had had heart failure. He had had "rheumatism" for twenty-five years in one or both feet. For ten years he had urinated four to six times at night and only once or not at all in the day time. He drank alcohol in moderation. For fifteen months ending the Christmas before admission he worked at silver polishing, standing. After the first month his right leg became swollen and a red spot developed. The swelling was always less in the morning.

At Christmas, eight months before admission, he went to work on the ice and contracted a "cold" which had persisted, with dyspnea, obliging him to sleep upright, nycturia, and "sleep starts," obliging him to go to the window to catch his breath. There was no real cough. The sputum was too tenacious to be raised freely. He had attacks of "dyspepsia" now usually twice a week, characterized by gas and rare vomiting without relief. He worked with a pick and shovel until two days before admission.

Examination showed a well nourished man, slightly cyanotic and dyspneic, with slight hacking unproductive cough. The skin showed cold sweat. The mucous membranes were cyanotic. There were many small firm non-tender cervical, inguinal and epitrochlear lymph nodes. The apex impulse of the heart was seen and felt in the fifth space. The left border of dullness was 12 cm. to the left of the midsternal line, 2 cm. outside the nipple line. The right border was 5.5 cm. to the right. The action was regular and rapid. The first and second sounds were loud and valvular. There was a soft systolic murmur at the apex. The

aortic second sound was accentuated. The artery walls were sclerosed. The brachials pulsated. The blood pressure was 225/150 to 205/125. The lung signs were as shown in Figure I. The abdomen was slightly distended

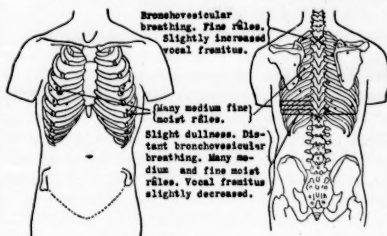


FIGURE I.

and tympanitic except in the flanks. The liver dullness extended from the fourth space to 2 cm. below the costal margin. The edge was indefinitely felt. A tender tumor in the splenic region was felt indefinitely 3 cm. below the costal margin. The pupils were slightly irregular and reacted sluggishly to light, normally to distance. The right knee-jerk was greater than the left.

The temperature was 99.7° falling to 97.3°, the pulse 99 to 61, the respiration normal. The urine was normal in amount, specific gravity 1.010 to 1.018, a trace to a very slight trace of albumin at all of five examinations, occasional red blood corpuscles at two; no sugar. The hemoglobin was 80 per cent., the leucocytes 7,000, the polynuclears 80 per cent. The smear showed questionable slight achromia, no other abnormalities. A Wassermann was unreliable.

During the week the patient was in the hospital the blood pressure fell and the dyspnea was relieved.

Ten years later, when he was sixty-three, he came to the Out-Patient Department showing a mild diabetes. Under treatment he became sugar free in two months. A year later X-ray showed extreme flat foot and marked calcification of the arteries of the foot, including the terminal branches.

June 7, thirteen years after his last discharge, he reentered the hospital. His daughter gave the following history of the interval. Since his visit to the Out-Patient Department two years earlier he had kept to the diet ordered. His urine had been examined from time to time by his family physician. For a year or more he had been ailing, but not definitely until six months before admission. Then he began to be short of breath after meals and upon exertion and to have periods of nocturnal dyspnea. For five or six months he had not been able to sleep lying flat. He had complained of substernal oppression. In February, four months before readmission, he had an

operation upon the rectum. For three months he had had swelling of the legs, at first only at night, later constant. For four weeks he had had marked hesitancy in urination and retention of urine. He had grown somewhat nervous and uncomfortable. For the past three weeks he had had periods of partial irrationality.

Upon examination he was obese, dyspneic, sitting propped up in bed. The skin and mucous membranes were cyanotic. The teeth were decayed. There was marked pyorrhea. The tonsils were scarred. There was a possible wen on the back of the neck. There was barrel chest, with practically no expansion. There was dullness with râles at both bases posteriorly. The apex impulse of the heart was not found. The action was regular and rapid. The sounds were of poor quality. There was a musical systolic murmur at the apex. There was alternating pulse. Electrocardiogram showed normal rhythm, rate 110, small complexes with flat T₂, slight left axis deviation. The blood pressure was 115/80 to 145/90. The abdomen was distended and showed marked shifting dullness. Rectal examination was negative. The genitals showed edema and the extremities marked edema. The knee-jerks and ankle-jerks were not obtained. The pupils were small, circular, equal and fixed to light.

The temperature was 97.7° to 104.8°, the pulse 72 to 125, the respiration 17 to 37. The urine was neutral at one of seven examinations, specific gravity 1.020 to 1.022, a slight trace to the slightest possible trace of albumin at six examinations, no sugar. The sediment showed one to six leucocytes per high power field at two examinations, rare leucocytes at another. June 6 the residual urine after voiding was 2½ ounces. The blood showed 4,700 to 8,400 leucocytes, 84 per cent. polynuclears, hemoglobin 80 to 90 per cent., 4,540,000 to 5,500,000 reds with slight anisocytosis and poikilocytosis. A Wassermann was negative. The non-protein nitrogen was 44 mgm. The blood sugar was 141 mgm. The stools were negative at two examinations.

The patient showed no marked change for the first week. Then he failed, at first slowly, then rapidly. The temperature rose to 104.8°, the pulse to 126. June 21 he died.

DISCUSSION

BY DR. RICHARD C. CABOT

It is important for us to realize that he is now sixty-seven. At the time of his first physical examination he was fifty-three. If the measurements at that time are correct this would be a very much enlarged heart.

This has no right to be merely a congested spleen. We almost never feel the spleen from simple passive congestion in the way that we

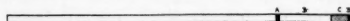
do feel the liver. If the spleen is palpable and especially if it is tender it is ordinarily due to infarct and not to passive congestion. Of course this may not be the spleen but something else mistaken for it.

The pupils suggest the Argyll-Robertson pupils.

The lung diagram is that of passive congestion.

During the week that he stayed here he was being treated presumably for hypertension and its results.

I sometimes wish we could have before us in these cases a diagram of the patient's whole life as we know it, showing the sick periods and the well periods. I think it is very interesting that a man with a blood pressure as high as that and seeming as sick as he did goes off and is well for ten years. If we had his whole life spread out before us we should see what a short period that was of sickness. I often do that



CASE 11501. FIGURE II. Periods of disability and partial disability. A, illness of second admission. B, ten years' remission. C, partial disability (diabetes). D, final illness.

in private records, drawing out a line and with the patient's assistance plotting his sick periods and his well periods. Otherwise we are very apt to telescope the periods where there are no symptoms.

He came in the second time apparently not for his heart at all but for diabetes. He probably was complaining of pain in his feet. There is not a word about heart symptoms at this time. Not only did he get along all right for these ten years, but apparently at the end of these years he was better than at the beginning. I think that is extraordinarily interesting. We have a twelve-and-a-half year interval before there is any return of the cardiac symptoms. I wish I could publish this case to every single man in this country who sees high blood pressure. Some people when they see a blood pressure of 225 call in all the relatives and act as if the patient were liable to blow up over night. And here it goes twelve and a half years before there are any cardiac symptoms.

We all know when we see an alternating pulse that it is the most dangerous thing we know in heart disease. Dr. White's records do not show, I think, any man with an alternating pulse living more than eighteen months. Just as we ought not to be afraid of high blood pressure, we ought to be afraid of alternating pulse. It is a thing we find perfectly easily in taking the blood pressure, but we cannot get it in feeling the pulse. In taking the blood pressure we let it go down slowly and there comes a place where we hear double the number of beats that we have been hearing.

I think it was at our last exercise here that I

was discussing this very question. When we see a man with a big heart and a low blood pressure at the end of life, have we a right to argue that he had a high blood pressure earlier? Here is a case where we know he had, and I think that more and more we have to make that guess.

DIFFERENTIAL DIAGNOSIS

One of the things we should like most to know about this man, which we probably never shall, is whether he changed his habit of life at the time he had that 220 blood pressure, whether we can account for the twelve and a half years of apparently decent health on the grounds that he was not trying to do anything like as much as he had been before.

The final examination is very much like the one of twelve and a half years earlier. He shows dropsy, he shows alternation, he shows no marked evidence of kidney damage and no evidence of valvular disease unless the musical quality of the murmur at the apex is taken as such. That might be evidence of an acute endocarditis. It would not in my opinion be evidence of a chronic endocarditis.

Then he has a terminal fever, presumably a terminal infection. We might speculate on what that might be. I suppose acute pericarditis is the commonest thing, but pneumonia would be a close second, and acute endocarditis perhaps third. It can only be a guess.

At necropsy then we should see arteriosclerosis, a hypertrophied and dilated heart, chronic passive congestion, and very probably some terminal infection,—what I do not see that we can possibly say.

A PHYSICIAN: Would you absolve the kidney on the low non-protein nitrogen there?

DR. CABOT: And the high gravity. I do not think high "fixation" means anything. It is only fixed low gravity that is important.

A PHYSICIAN: Wouldn't the sugar account for the low gravity?

DR. CABOT: There was no sugar.

A PHYSICIAN: It was high in the blood.

DR. CABOT: Scarcely.

A PHYSICIAN: Would you attribute his mental symptoms to his heart failure or to his cerebral arteries?

DR. CABOT: I think the latter. We certainly get a great many more mental symptoms in the heart failures of old people than in the heart failures of young people. So far as we know the cardiac condition the failure is about the same. So I suppose we have to say it is the arterial condition in the brain that makes the difference.

We might speculate about syphilis in this case. He certainly had once questionable and once definite Argyll-Robertson pupils. He had a difference in knee-jerks, and the last time we did not get it at all, but he was pretty sick then. Was the spinal cord examined?

DR. RICHARDSON: No.

DR. CABOT: Then I think there is not much use in going further. But if the cord had been examined it might have shown early tabes.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerotic heart disease.
Congestive failure.
Myocardial insufficiency.

DR. RICHARD C. CABOT'S DIAGNOSIS

Arteriosclerosis.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Terminal infection?

ANATOMICAL DIAGNOSIS

1. Primary fatal lesion

(Hypertension.)

2. Secondary or terminal lesions

Arteriosclerosis.
Hypertrophy and dilatation of the heart.
Fibrous myocarditis.
Chronic passive congestion, general.
Slight hydropericardium.
Double hydrothorax.
Ascites.
Mural thrombi, left ventricle and right auricular appendix.
Embolie thrombotic occlusion of small branches of the pulmonary artery.
Infarcts of lungs.
Compression atelectasis of the lower lobes of the lungs.

3. Historical landmarks

Slight chronic pleuritis.

DR. RICHARDSON: The outstanding conditions in this case were, the right lower extremity was swollen and pitted, the left was negative; there was some edema of the scrotum and penis. In the peritoneal cavity we found at least 1000 c.c. of thin pale fairly clear fluid.

The stomach and intestines were negative except for some chronic passive congestion.

The liver margin was eight cm. below the costal border. That is low. The diaphragm on the right was at the fifth rib, on the left at the fifth interspace,—fair levels.

In the right pleural cavity there was 2000 c.c. of thin pale clear fluid, in the left 1500 c.c.—hydrothorax. There were a few pleural adhesions. The trachea and bronchi contained much brownish red frothy fluid. The lungs generally showed much chronic passive congestion. In addition the lower lobes were slightly collapsed,—compression atelectasis from the fluid. On the right side in the middle and lower lobes there were several frank in-

farcts, and in the left lower lobe there were three other frank infarcts. Some of the branches of the pulmonary artery leading to these showed thrombotic plugs, indicating of course that somewhere we must find a source for them.

In the pericardium there was 50 c.c. of fluid, a slight excess. The heart weighed 555 grams, considerably enlarged for him. Macroscopically it was a good enough myocardium, but the microscope showed in a few places small foci of chronic interstitial myocarditis, the replacement of muscle tissue by fibrous tissue,—not very extensive. There was slight dilatation of the cavities on the left, moderate on the right. In the right auricular appendix there were several smaller and larger frank thrombotic masses, the source of the plugs in the pulmonary artery. In the left ventricle in the region of the apex there were a few small mural thrombi. We find these in hypertrophied and dilated hearts of this type not infrequently. The valves were frankly negative. They showed of course the usual sclerosis present at this age. The coronaries were free but showed scattered along the walls much fibrous and fibrocalcereous sclerosis with some diminution of the lumen, the cause of the fibrous myocarditis.

The aorta and great branches showed well marked sclerosis, fibrous and fibrocalcereous. It was quite well marked in the ilia. The radicles of the inferior vena cava as far as the upper part of the femorals showed nothing. We looked in those because of the one-sided edema previously mentioned.

The liver showed passive congestion. The spleen weighed 357 grams, moderately enlarged, the tissue elastic,—passive congestion. The kidneys weighed 405 grams,—large kidneys, but the capsules stripped and the surfaces were smooth and brown-red. The section surfaces showed good tissue except for passive congestion.

Was there temperature in the case?

DR. CABOT: Yes, at the end. I suppose we have to connect it with the infarcts. There is nothing else to connect it with.

CASE 11502

MEDICAL DEPARTMENT

A married American woman of twenty-five entered October 21 complaining of respiratory difficulty. She was able to talk with difficulty, but was very dyspneic. No family or past history was obtained, except that a brother died of acute anterior poliomyelitis with respiratory paralysis five years ago. The patient was three months pregnant.

Two weeks before admission she began to have general weakness, lassitude and malaise. Ten days before admission she noticed slight muscular weakness, chiefly in the left shoulder.

Three days before admission her right leg gave out. She fell and was unable to get up. Soon after this her right leg became so weak that she could not move it without great effort. Her left shoulder also was affected. At the same time she noticed some slight difficulty in breathing. This did not become acute until the morning of admission, when it became very severe and she was unable to cough or swallow. During the day she had two attacks of acute respiratory difficulty from which she thought she would never recover.

Examination showed a young woman with cyanotic lips, lying in respiratory distress. The neck was slightly stiff. The eye movements and face movements were normal. The respirations were shallow and weak. The right side of the chest moved less than the left and was full of moist râles front and back; an occasional moist râle was heard in the left chest. She was able to make only a slight expiratory effort. She could not cough. The breathing was labored. The sternomastoid and trapezius muscles were used in respiration. The location of the apex impulse of the heart is not recorded. There was no enlargement to percussion. The sounds, action, pulses and arteries were normal. The blood pressure was 135/85. There was slight tenderness in the right lower quadrant. The abdominal reflexes were absent on both sides. Both arms and legs were weak. The left arm was weaker than the right and the right leg weaker than the left. The separate muscles were not examined. The kneejerks and ankle-jerks were absent on both sides. There was no Kernig.

The temperature was 98.4° by rectum, the pulse 140, the respiration 40. The urine and blood are not recorded. A Wassermann was negative.

At 8 p. m. the evening of admission a lumbar puncture was done. It gave 25 c.c. of clear colorless fluid, initial pressure 70, jugular rise 300, fall 70, pressure after withdrawal of 5 c.c. 30, drained to 0. The spinal fluid showed 66 leucocytes, 2 per cent. polynuclears, 82 per cent. lymphocytes, 16 per cent. large mononuclears, 1 red blood cell; total protein 54, Wassermann negative, goldsol 0001121000, sugar 58, chlorid 707; plasma chlorid 565.

An hour and a half after the puncture the respirations became very shallow and inadequate and the patient became more cyanotic. Artificial respiration was instituted at once. The Means apparatus with five per cent. carbon dioxide and ninety-five per cent. oxygen was used at first. Later pure oxygen was used. The mixed and the pure oxygen seemed to be equally effective in clearing up the cyanosis. Manual manipulation of the ribs was also used. The patient's condition remained about the same until 3 a. m. Then the pulse, which had been slowly rising, stopped entirely. The respira-

tory movements of the sternomastoid continued after the heart had stopped.

DISCUSSION

NOTES ON THE HISTORY

BY DR. MAURICE FREMONT-SMITH

The family history shows nothing of importance. With a respiratory difficulty like this some cardiac lesion is probable.

From the neurological side it is of great importance to notice *first symptoms*. For in neurological diagnosis these initial manifestations are often our best key to the localization of a tumor, an abscess, or any other lesion of the central nervous system. One often works back with a great deal of pains to get at an initial palsy, diplopia or sensory disturbance which may be forgotten later in the patient's casual recital. Many lesions may finally cause the same picture. But if we can get back to the very first symptom, that will often give the lead to localization. Especially is this true in cerebral localization. Here the first thing noticed was weakness in the left shoulder. That is the first localizing sign. She then noticed weakness in her left leg, then in the right leg,—evidently a progressive condition later causing respiratory difficulty. Of course this suggests some lesion involving the nerves that go both to the shoulder and to the breathing apparatus. The diaphragm we know is innervated from the third and fourth cervical segments and the deltoid from the same part of the cord. We can therefore feel pretty certain that we are dealing with some lesion involving at least the cervical cord.

We have to eliminate the heart or some mechanical condition such as fluid in the chest as further causes of dyspnea.

NOTES ON THE PHYSICAL EXAMINATION

We all know that if the chest is expanding only partially there will develop an atelectasis which will give rise to râles if the patient take an extra deep breath. At the bases of the lungs in patients who are breathing very shallowly there is often such atelectasis. I assume that these râles are due to the same sort of condition, the chest here expanding only slightly or unequally.

Is her inability to cough due to her inability to contract her abdominal and thoracic muscles? Or is it because she cannot get enough air into her chest to cough? In other words, are the inspiratory or the expiratory muscles at fault, or is it because she cannot close her glottis to increase the intrapulmonary pressure enough to cough?

There is no enlargement of the heart to percussion.

She has a stiff neck. That suggests either

a meningitis or a meningismus, (which can occur in high cervical tumors). But if cervical tumor, how explain the absent reflexes? These must be due to lesions in the anterior horn cells or to a transverse myelitis, which will also give absent knee-jerks. In any other type of lesion in the cord interfering with the motor tracts we should get increased reflexes.

I think we can account for the high pulse and respiration both by insufficient aeration.

Seventy is certainly a low pressure for the spinal fluid, but 300 is an enormous rise. I do not know how to explain this rise. We can feel certain at least that there is no block, and that is a very strong argument against a tumor of the cord. For usually with tumor of the cord large enough to cause definite neurological symptoms we find interference in the dynamics of the spinal fluid.

The fluid examination shows a definite meningitis of low grade. The cell count is consistent with abscess, with tuberculous meningitis, with early poliomyelitis, and with syphilitic meningitis. The red cell is not significant. The total protein is slightly up. The gold solution is a little abnormal, not indicating anything definite. The sugar is a little higher than we should expect. It is certainly not the low sugar that one would get later on in meningitis and that one would expect to find even at this time in tuberculous meningitis.

On the basis of these fluid findings I think we should suspect first poliomyelitis. We can think of tuberculous meningitis, but the high sugar is against it. Syphilitic meningitis is eliminated by the Wassermann and the gold solution. Abscess: we certainly are not dealing with an intracranial, but an intraspinal condition, and abscess of the spinal cord is, so far as I know, unknown. If it is abscess, it is meningitis. We have to choose then between poliomyelitis and possible tuberculous meningitis. Although on the fluid findings one has to consider tuberculous meningitis, the history and the neurological findings are not consistent with this diagnosis. Headache and drowsiness are absent. We should never find, moreover, in tuberculous meningitis certain muscle groups picked out in weakness or paralysis.

DIFFERENTIAL DIAGNOSIS

I think we shall have to say here that in spite of the family history of acute poliomyelitis with respiratory paralysis,—and it is unfortunate because it suggests that diagnosis,—we are probably dealing in this case with the same condition, a type of progressive poliomyelitis with paralysis of the muscles of respiration. The patient evidently died not because the respiratory center ceased to function, as would be the case in the ceasing of breathing due to meningitis, but rather because the muscles having to do with the respiratory act became paralyzed.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute anterior poliomyelitis.

DR. MAURICE FREMONT-SMITH'S DIAGNOSIS

Acute poliomyelitis.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Anterior poliomyelitis.

2. *Secondary or terminal lesions*

Edema piae.

Hemorrhagic edema of the lungs.

Soft hyperplastic spleen.

3. *Historical landmarks*

Pregnant uterus.

DR. RICHARDSON: Head examination. The pia was wet, the vessels of Willis, sinuses, middle ears, pituitary and pineal glands negative. The brain weighed 1255 grams and was outwardly negative.

Spinal cord. In the medulla and all along the length of the cord the gray matter showed homogeneous dull reddening, and along the margins in places there were small dull reddish areas. In the cross sections the level of the gray matter was depressed in places. Otherwise it showed nothing for note. Microscopic examination showed the lesions of anterior poliomyelitis.

The lungs showed no areas of consolidation, but there was considerable hemorrhagic edema. The spleen was slightly enlarged and the tissue rather soft.

The uterus was enlarged. Laid open it measured 13.5 cm. long and about 11 cm. in the region of the fundus. The wall in the region of the body of the organ was 11 mm. thick. In the region of the upper left quadrant there was a fetus 7.5 cm. long, weighing twelve grams, about the third month. The parts were in good condition and negative.

CASE 11503

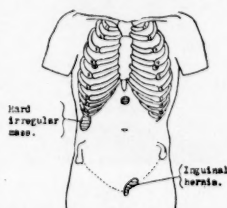
UROLOGICAL DEPARTMENT

An Italian barber of twenty-five entered September 20 complaining of "pains all over the stomach." His family history was good. His past history was negative except that he had had gonorrhea three times, at eleven years, fifteen, and twenty-two. Each time he treated and cured himself.

Late one evening two weeks before admission he was seized with sharp cramp-like pain beginning just above the symphysis pubis, moving upward over the abdomen as high as the ensiform, and gradually spreading to all parts

of the abdomen. He vomited twice, food eaten at dinner with no blood or bile. Shortly after the onset of the pain he passed red urine. The hematuria persisted. His bowels had been very constipated but had moved with catharsis. The abdominal pain had become localized to the left umbilical region and had persisted as a dull ache with only slight tenderness in this area. Medicine given by his physician had given no relief. His appetite had been poor and he had lived on milk, soup, eggs and toast.

Examination showed a pale, emaciated young Italian moving about in bed with difficulty because moving caused pain in the epigastrium. The heart showed no enlargement. The sounds were of poor quality. The action was regular. The pulses and arteries were normal. The blood pressure was 95/70. The entire right side of the abdomen was more resistant than the left. On deep palpation a hard irregular mass the size of a lemon could be felt (see diagram). This mass seemed to move with deep respiration. It was only slightly tender. Four centimeters below the



ensiform in the median line was a soft swelling 2.5 by 3 cm. which bulged on coughing. In the left groin was a soft swelling extending down into the scrotum. The external ring on this side was enlarged and through this the swelling could be replaced. The left testicle was a quarter the size of normal, but soft. The right epididymis was enlarged and hard.

Before cystoscopy the temperature was 98.4° to 100°, the pulse and respiration normal. The amount of urine is not recorded. The specific gravity was 1.015. The urine showed no blood during the hospital stay. The bladder function was 15 per cent. to 50 per cent. The blood showed 7,800 leucocytes, 62 per cent. polynuclears, hemoglobin 70 per cent., 5,000,000 reds, with slight achromia. No nucleated forms were seen. A Wassermann was strongly positive. The non-protein nitrogen was 30 mgm. per 100 c.c.

September 22 cystoscopy was done. The urethra was easily passed. The bladder was slightly trabeculated, otherwise not abnormal. Both ureters seemed normal and were easily catheterized. The right urine was slightly blood tinged, the left clear. The function of the right kidney was found to be 25 per cent., that of the left five per cent. (plugged cath-

ter?). A pyelogram showed the opaque catheter reaching the level of the second lumbar transverse process on the left and the first lumbar transverse process on the right. The outline of the right kidney pelvis was definitely irregular and appeared mottled. There was a large amount of gas present throughout the bowel and the kidney outline itself could not be made out.

The night of September 24 the temperature rose to 103.8°, the pulse to 111. The patient



CASE 11503, PLATE I. Right kidney, September 22. The opaque catheter reaches the level of the first lumbar transverse process on the right. The outline of the right kidney pelvis is definitely irregular and appears mottled. The findings are those of a pathological process involving the right kidney. There is a large amount of gas present throughout the bowel, and the kidney outline itself cannot be made out.

continued to run a septic temperature, perspired a great deal and was uncomfortable, complaining of pain in the region of the right kidney.

September 29 a second cystoscopy was done. It showed the bladder somewhat injected. The left ureter was easily catheterized, but the catheter did not seem quite to enter the pelvis. Throughout the flow was ureteric. The urine from the left side was clear, and after an intravenous injection of phthalein there was a slow drip of rather pale color. The function of the left kidney was 10 per cent. in fifteen minutes. A left pyelogram showed the opaque catheter on the left reaching to the level of the transverse process of the second lumbar vertebra. The calices appeared to be well filled and there was some apparent blunting of the calices in the upper portion. The sediment from the left kidney showed an occasional epithelial cell.

The patient grew worse. October 3 0.3 mgm. of neodiarsenol was given. A gonococcus fixation test was negative. A second Wassermann was negative.

October 10 operation was done. The next day the patient was uncomfortable and vomited stercoraceous material. A subpectoral of 2000 c.c. was given, and the following day a subpectoral of 1000 c.c. of glucose and 1000 c.c. of saline. He became more comfortable and was able to take fluids. October 14 he was taking a soft solid diet and was not vomiting. The temperature fell after the operation to subnormal, 97° to 98.4°; beginning October 15 it ranged from 97° to 102°. He made a fair convalescence. He had some epigastric discomfort and later considerable epigastric pain requiring morphia p. r. n. By the 1st of November he was up in a chair daily, weak and still with epigastric pain. A barium enema was attempted, but was a failure, as he would not retain the barium. November 6 he was discharged.

DISCUSSION

BY DR. J. DELLINGER BARNEY

NOTES ON THE HISTORY

In other words, there was nothing that he remembered in the family or past history of



CASE 11503, PLATE II. Left kidney, September 29. The opaque catheter reaches the level of the second lumbar transverse process on the left. The calices appear to be well filled, and there is some apparent blunting of the calices in the upper portion.

real importance or that had any particular bearing on the present illness.

We questioned him very carefully about the hematuria—he was quite intelligent and spoke English well—for the reason that as we shall point out later there was no hematuria when he came in and none subsequently. But he was very sure that he had passed red urine.

Again, he laid no particular stress on the constipation. It did not seem like the story of anything more than one frequently sees among

patients,—obstinate constipation.

At the time he came to us the abdominal pain was not a marked feature but had been prominent for some time. The pain so far as he knew was not localized to the region of either kidney. I say "either kidney" because coming to the Urological Department we thought it must be a urological case. But it is always well to think in other directions. It was a brief history and not particularly conclusive of anything except that the hematuria was significant.

NOTES ON THE PHYSICAL EXAMINATION

The mass interested us a great deal. We thought we could feel it by putting one hand in the costovertebral angle; we thought we could move it between the two hands. It was definitely movable. It was extremely hard and also tender. There was no mass to be felt elsewhere in the left flank. The mass in the median line was apparently a ventral hernia due to diathesis recti, and the other was an inguinal hernia.

We thought that the epididymitis was probably a subacute affair, possibly tuberculous, but possibly a relic of his gonorrhea.

The phthalein test does vary. Apparently it always varies according to circumstances. Fifty per cent. was good; fifteen would be rather low, but it would have to be carefully interpreted in view of our findings.

The laboratory, except for the positive Wassermann did not throw much light on the trouble for which he came in. The non-protein nitrogen was normal for a man of this age.

A blood-tinged urine from a ureteral catheter means nothing at all. The catheter scratches the mucosa. If the blood is not macroscopic it is practically always microscopic.

Twenty-five per cent. is a perfectly good renal function. Five per cent. would be poor if it was accurate. Probably it was due to a faulty observation.

In other words, there was a little difference in the distance to which the catheter was pushed on the two sides.

Dr. Holmes, will you show the plates?

DR. GEORGE W. HOLMES: Plate I shows the right kidney pelvis injected. The irregular shadows seen represent gas and obscure the kidney shadow. This pyelogram is definitely abnormal. It gives the impression of a ragged and moth-eaten pelvis, and may be due to gas or to a mass within the kidney pelvis.

DR. BARNEY: He had what is not uncommon, a reaction after his cystoscopic examination.

There was intermittent peristaltic outflow, indicating that the catheter was in the ureter rather than in the pelvis.

The renal function was only five per cent. be-

fore, and we thought might be due to plugging of the catheter. But here it was perfectly clear, and it was only ten per cent. Epithelial cells are entirely a normal finding.

DR. HOLMES: The left pyelogram, Plate II, showed no particular amount of gas. We interpreted it as a deformed pelvis. The upper calices appear to be clubbed, blunted, and somewhat dilated.

DR. BARNEY: So that on both sides we got an abnormal kidney pelvis, although we did not get anything abnormal in the urine, and on two occasions a low function on this side, and this mass on the right side.

The fact that the gonococcus fixation test was negative I consider of no importance. We have practically given it up as a diagnostic measure.

The second Wassermann was negative, possibly because of the fact that he had had a small injection of neosalvarsan. Having had a strongly positive Wassermann we thought that if any operation was to be done he should have a little preliminary treatment.

DR. HOLMES: We were in agreement on these things at the time, I think.

DR. BARNEY: I think we were. What I read was an abstract of your report.

DR. HOLMES: According to this report we did not say that. We did not make any decision. This plate has so much motion in it that this blunting I think might perfectly well be due to motion.

DR. BARNEY: Don't you think the upper portion looks suggestive of pyelonephrosis or cystic kidney?

DR. HOLMES: It looks like pyelonephrosis.

DR. BARNEY: It could not have been pyelonephrosis with a negative urine.

DR. HOLMES: This plate certainly is not normal. I should not know how to interpret it.

DR. BARNEY: The calices are clubbed here and there, but there is all this frayed out appearance around the kidney, or possibly it is injection fluid forced into the kidney, or it might be due to an abscess cavity which had previously existed. Or an old blood clot in the kidney might have looked like this.

We do not know what to say as to the cause, but we do know that both these pelvises were abnormal to a greater or less degree. Our pre-operative diagnosis was arrived at after what we thought was very careful deliberation. We thought of various things with this hard nodular mass and the hematuria. We thought this was a tumor of the right kidney, and it was so regarded in our minds until we did a bilateral cystoscopy. This X-ray would have fitted with that. The fact that the function was fairly high was not against tumor. There was a tumor, no question about it. When we did the left side and got a deformed pelvis we

thought there was no likelihood of two tumors, but a greater possibility of bilateral polycystic kidney. The negative urine, the low function would have fitted that. So that I think that was our best choice as a pre-operative diagnosis, although it is fair to ourselves to say that we were not at all sure of it.

DR. CABOT: But you were quite sure that he needed operation?

DR. BARNEY: Yes, because we thought that this kidney on the right side, if it was a tumor, ought to be taken out, and if it was a polycystic kidney we should know that fact and give him the chance of an eliminative operation. But the point is—and this is interesting—he came to us, and therefore went down in our minds as of course a urological case; an illustration of how easy it is to have one's mind run in one channel. He came in with hematuria and a nodular mass, and of course it must be a kidney, and we did not think very hard of any other possibility. My pre-operative diagnosis was polycystic kidney, although it is fair to say that I was not satisfied with it. I was so dissatisfied with it that I asked Dr. Porter to come in and look at him before he had the ether. Dr. Porter heard the history from the patient. I think he said, "That is kidney," and backed me up in my decision to go through the right rectus muscle, because if it was a kidney tumor that would be the way to handle it. Then Dr. Edward P. Richardson happened to come along. He heard the story, felt the patient, and said, "I don't think that is kidney. I think it is liver. But," he said, "I think you would better go in through the anterior incision." I did not argue with him very strongly about its being liver.

DR. BARNEY'S PRE-OPERATIVE DIAGNOSIS

Polycystic kidney.

OPERATION

Gas-ether. Before operation a consultation was held. One consultant thought that the mass felt was the kidney and advised the oblique incision. Another thought it was liver and advised a right rectus incision. The latter incision was made through the upper right rectus. On opening the peritoneum the mass was found to be a much enlarged liver studded with hard nodules of malignant disease. The gall-bladder was somewhat distended. The omentum, intestine and hepatic flexure were adherent to the right lobe of the liver. The appearance in full suggested a new growth of the colon with metastasis in the liver. The left kidney was palpated without difficulty and was found to be apparently normal in size, shape, position and consistence. The right kidney was palpated with some difficulty owing to the large liver which was apparently pressing on it.

So far as could be determined the kidney was normal in size, shape and position.

FURTHER DISCUSSION

DR. BARNEY: It did not seem fair to take much time to tear up adhesions and explore. There was a mass in the hepatic flexure of the colon which seemed to be in the lumen of the colon itself. It was obviously inoperable, but I should think that is what was really there,—a tumor, undoubtedly a cancer of the hepatic flexure with metastases in the liver.

It was a very difficult thing to feel the kidney because the liver was adherent, and it was hard to find one's way down behind the liver to the kidney. And as I say, the kidney was, so far as we could tell by feeling, normal on both sides.

He had a reasonably good convalescence. We tried giving a barium enema to see if we could not localize more definitely the position and size and character of the growth, although we knew that under the circumstances there was nothing operative that could be done unless there was obstruction, in which case colostomy would have to be done for temporary relief.

The whole point is that this man came to the Urological Service and we did not think in enough directions to take in liver or some other organ. I think it is fair to say that none of us ever thought of carcinoma of the liver. One must keep his mind constantly on the jump. It is a very unusual combination of circumstances to get the clinical findings, the blood pressure and so on, and also the X-ray findings that we did. Those can be explained, I think, in the light of our present knowledge, on the grounds of pressure. As Dr. Holmes says, the movement may explain something. They would be different if the patient kept still. I should say also that it is an unusual history for carcinoma of the intestine.

A PHYSICIAN: Have you ever seen a case with this appearance in the pyelogram due to pressure?

DR. BARNEY: I don't think I have.

DR. HOLMES: I never did. I have seen a similar picture where air was injected or in cases where there was a papillomatous growth in the pelvis or in cases of hemorrhage in the pelvis. But it is not typical of anything. I don't think that any of the pictures suggest a polycystic kidney.

DR. BARNEY: No, they don't. I think we thought we should have to consider that when both sides were abnormal.

DR. CABOT: Why don't the X-ray experts speak up louder before operation?

DR. HOLMES: This sort of thing will come up if we don't come out flat-footed in our interpretation, a thing we often cannot do be-

cause we have not the necessary data. The clinicians are then apt to say, "These fellows don't know much about this case; they are undecided, and we shall have to make our own interpretation." We don't get together enough. I don't get into the wards and talk these cases over with the clinicians, and they don't come down and talk them over with me. Years ago when we had only one or two cases on a service it was an easy matter to get together. Now we have practically every case on a service, and of course it is impossible for us to do it.

DR. CABOT: But a case like this, where the diagnosis was really in doubt, might be one that you would select to talk over with Dr. Holmes.

DR. BARNEY: I don't doubt it might have thrown a great deal of light on the case. But we have a report which describes an abnormal pelvis on the right and also says that the calices on the left are blunted. That was enough to show us there was something abnormal in each kidney.

MISS PAINTER: The interpretation of the X-ray was, "The findings are those of a pathological process involving the right kidney."

DR. HOLMES: That is not my interpretation. The right side is very unusual. I never saw anything like it.

DR. CABOT: The thing that impresses me most and impresses me all the time is that we do not know the normal X-ray appearances. I got Dr. Holmes to give a little lecture the other day on the sella turcica. Most of us have no idea how much it can vary from the average picture and still not be abnormal. It is just the same way in the lungs. It is one of the places where it seems to me the X-ray people ought to get up on the platform and teach us the limits of normal.

DR. HOLMES: I think that at times we do not say enough in our reports. But we have such a small part of the data that we hesitate to say much.

DR. BARNEY: As regards the study of the kidney pelvis, I feel that the normal has tremendously wide limits, and we do not know much about it.

DR. HOLMES: We have not only the normal variation, but all the distortions that go with shadow. If the patient is rotated or if there is motion the picture is changed.

DR. BARNEY: I am hoping that some day some one will give a grant to turn some young

man loose to take out kidneys, inject them with fusible metal and study them. I think a thousand injections could be done without a great deal of labor and time and without very much money, and it would be of tremendous interest and value.

DR. CABOT: I find the same thing in all parts of the body. I hear people constantly saying that a normal heart is abnormal. I hear the same thing about the lungs from people who have not listened long enough to know what can be normal, how rough the breathing can be at the right apex before it means disease.

DR. BARNEY: It was not only the pyelogram but the whole picture.

DR. HOLMES: If we can fluoroscope these cases we shall not be so likely to make that error.

A PHYSICIAN: What caused his hematuria?

DR. BARNEY: I do not know whether he had it or not. He said he had it. We have never confirmed it. He never had a blood cell in his urine after he entered this hospital. He may have had it. He may have had it due to this queer pressure that gave this X-ray picture. That might be a blood clot.

DR. CABOT: The whole case reminds me of my first visit to a convalescent home to which I had just been appointed. The matron was introduced and with a rather tired smile she said to me, "I hear you are interested in the blood. I suppose all the women will now have blood diseases. The last man was Dr. Reynolds, and they were all pelvic. Under Dr. Payson Clark they were all throat cases,"—the same women!

A PHYSICIAN: Is it unusual to get carcinoma of the colon in a patient of this age?

DR. BARNEY: Yes. That is another feature. That certainly would be misleading to anybody. It would be very young for malignant disease of the kidney. But he might have a polycystic kidney at this age, might he not?

DR. CABOT: Yes, at any age.

LATER HISTORY

The hospital to which the patient was discharged reports that he died four days after his admission. No necropsy was done.

DR. BARNEY'S DIAGNOSIS

Carcinoma of the hepatic flexure with metastases in the liver.

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AN UNUSUAL MEDICAL SERVICE

In August, 1925, The Bartow County (Georgia) Medical Society, under the inspiration of the Cartersville Rotary Club, carried on a scheme for examining and treating school children of Bartow County. Dr. Sam M. Howell, a member of the Club, suggested to the Rotarians the need for this service. The County Board of Health, the Auxiliary Board and Dr. H. E. Felton, County Health Officer, cooperated. The Boys' Committee of the Rotary Club supervised the plans. Each Rotarian was assigned to two or more school districts in the County for the purpose of having the members of the Auxiliary Board of each district assist in arousing interest in the clinic and getting parents to bring in the children. All doctors, dentists and trained nurses in the County volunteered and gave their services. A considerable number of lay workers also were enrolled who furnished all needed machinery and supplies except ether, bandages and such things as were not available in ordinary homes.

In two days 763 children were examined. A public spirited citizen converted his home into a temporary hospital in which four operating tables and thirty-five beds were installed. One hundred and six children had their tonsils re-

moved during two days, forty-eight children were fitted with glasses. One case of tuberculosis, twelve of hookworm disease and two of trachoma were discovered. More than four hundred children had teeth extracted. It was estimated that the extracted teeth amounted to about two pecks. The work done by the doctors, dentists and nurses if charged for at regular rates, would have cost between ten and fifteen thousand dollars. No money was paid to anybody for services. The County Board of Health paid a few bills amounting to about a hundred dollars.

Thus was staged one of the most practical and comprehensive public health demonstrations of which we have been informed. Great credit should be given to all who participated in this movement. The medical, dental and nursing professions should take pride in this demonstration of the altruistic ideals of their representatives in this section of the country.

To some it may seem that there may have been those who should have paid for the service rendered and this is probably true, but it seems to be evident that the scheme was carried on both as a demonstration as well as a public health measure and it is probable that the bread cast upon the waters will be found after many days.

DEADLY NICOTINE

ON our desk are two brochures, one "The Psychology of the Tobaccophobe," by O. Victor Limerick, M.D., Director of the Department of Pharmacology of the Brooklyn Diagnostic Laboratory, reprinted from the *Therapeutic Gazette*; the other, "Tobacco and Scholarship," published in the *Antioch College Notes*, giving the results of statistical investigations carried on among the students of that institution.

Dr. Limerick is an ardent champion of the theory that tobacco smoking is relatively innocuous and points out that the popular opinion relative to the effect of tobacco on man "cannot survive any of the tests having scientific respectability," and has been rejected by present-day scientists because "precise methods of investigation have proved it entirely out of harmony with fundamental laws of consistency."

The Antioch investigation, on the other hand, demonstrates with mathematical precision that both academic grade and athletic attainments are higher among non-smokers than among smokers, and, while admitting the possibility of a third factor, arrives at the inevitable conclusion that smoking is actually a cause of mental inefficiency. It is just such reasoning that Dr. Limerick takes exception to.

Granted that low scholarship and tobacco are associated to a greater degree than are high scholarship and tobacco, and low scholarship

and absence of the weed, is it not an unscientific attitude to assume that tobacco is the cause of the low scholarship? May there be not only a third but a fourth and a fifth factor, or more? May we not assume that the man who would inevitably achieve high scholarship abstains from tobacco because of the popular belief that tobacco is harmful?

In our limited experience we have not been led to believe that the man of poor scholarship who smoked was a poor student on account of his use of tobacco or that the high scholar attained his rank on account of his abstinence. There are too many exceptions to both rules.

As Dr. Limerick quotes from Professor M. V. O'Shea, of the University of Wisconsin, a member of the Committee to Study the Tobacco Problem, "Leading reformers, who should be regarded as creative thinkers, have generally been non-smokers, but the men who have created new nations, new types of government, who have welded nations together, and who have in other ways exhibited marked creative ability, have often been smokers."

A FAILURE

DR. J. ALLEN GILBERT of Portland, Oregon, in association with the Scientific American, has tried to ascertain the possibility of receiving communications from the Spirit World.

Before the death of his wife, Dr. Gilbert arranged with her for a test which either could use to demonstrate the possibility of communicating messages to those in the land of the living after either had died. Any message was to be verified by a "countersign." Many attempts by mediums were made to secure this prize. In one lot of one hundred and thirty-nine messages the correct countersign was not included.

The Editor and Publisher of the Scientific American then examined the next series of two hundred and eighty-four messages submitted by mediums. There were two hundred and eighty-four failures as announced by the Scientific American. Perhaps spirits do not approve of the sordid ambitions of the available mediums and would not participate in an award of no value to denizens of the spirit world. The attempts were crude and grotesque and demonstrated that either spirits do not send communications to living persons or that no suitable medium enlisted in the attempt.

We are led to admire the ability of Houdini who can entertain by legerdemain but we despise the foolish fakirs who consciously play with the emotions of trusting and unreasoning people. No mention is made of Margery or Walter in this fiasco. The test was too sim-

ple and rigid and did not include the mystery of dim light and contortion.

THE APPLICATION OF PUBLIC HEALTH DISCOVERIES

At the two-day Tuberculosis and Health Conference in New York, Dr. William H. Welch, Dean of the School of Hygiene and Public Health at Johns Hopkins University, stated his opinion to the effect that the reduction of sickness and death and the raising of standards of health depends upon utilization of knowledge already acquired. Although the world hails every great discovery with enthusiasm it promptly forgets its own responsibility and leaves the application to authorities. Only a comparatively few people who are under the guidance of alert physicians receive the benefits of scientific preventive health measures. In other words "we know how to do a lot of things which we do not do, or do on a wretchedly small scale."

Dr. Matthias Nicoll, Jr., claimed that the disgracefully high mortality incident to pregnancy and childbirth has not been materially reduced during the past twenty-five years. Dr. Thos. P. Farmer declared that 50 per cent. of maternal deaths could be prevented.

These indictments apply more to the public than to physicians for there is an undue encouragement of those organizations which are antagonizing the compulsory observance of well known preventive measures and efforts to raise the standards of medical education and medical practice. The medical profession, however, cannot shift all the responsibility for if a much larger proportion of physicians were well trained there would be more general application of public health measures through more active coöperation with health boards and more definite education of the people. Wherever there is ignorance and indifference and low medical standards progress will be slow.

THE HUMAN FACTOR

THE Massachusetts Society for Mental Hygiene has recently issued the first number of a quarterly series, "The Human Factor," planned to bring to those engaged in business and industry the results of the latest and best studies on the subject of the human factor in their field. This new bulletin, intended to appeal to employers, personal workers, educators in stores and factories, management executives, employment managers and physicians will be sent free to all members of the Society and on request to all residents of Massachusetts who, by occupation or profession, are interested in the human factor in business or industry.

THE PHYSICIANS' HOME

On the evening of November 23rd, 1925, a company of men and women met at the Hotel Waldorf Astoria by invitation of Robert T. Morris, M.D., President of The Physicians' Home, Inc., for the purpose of inaugurating the national campaign for an endowment fund to care for aged and needy physicians and their dependents. This movement began in a small way about four years ago in the creation of a home for physicians in the hills of Canaëda, New York, which is the first unit in this plan. Some pertinent facts are herewith presented.

Dr. Stephen V. Mountain of Olean, New York, dedicated a substantial house and about one hundred and eighty acres of land to the cause. A picture of the house appears below which is known as The Mountain Unit.



Four years have demonstrated the practicability of this plan because about a dozen physicians have been made comfortable in this unit. This scheme is not spoken of as a charity but rather as meeting an obligation which the country should recognize in providing comfort for those unfortunate members of a profession which has served humanity.

It is intended that these units to be established in all the States shall be homes to which properly accredited physicians may come as guests and spend the remaining years of life in tranquil peace. In order to make the home all that it should be there will be no separation of husband and wife but welcome shall be extended to both. Recognizing the importance of useful occupation, the plans include provisions for such equipment as may be desired for those persons who may be interested in scientific work and study.

Those who have made a study of the financial side of the practice of medicine have come to know that the doctor probably averages a 40% loss of fees through gratuitous service and non collection. The ethics of medicine and finance are not balanced in the doctor's mind in a large proportion of cases, hence the misfortunes of life have in some instances presented problems with which the physician has been unable to meet successfully.

It is not expected that these homes will be

luxurious but equipped to furnish comfortable quarters. Anything less would not reflect the sentiment of the profession or the wishes of donors to the endowment.

The contributors who give over \$5000 will be designated as Founders; Benefactors, those giving \$5000. The \$2500 class will be recorded as Donors; contributors of \$1000, as Patrons. \$500 makes a Life Member and \$100, a sustaining member. Contributors may pay half of the pledge at the time of subscribing, the balance 25% in six months and the remainder at the end of the year.

The officers of the Corporation are:

President—Robert T. Morris, M.D.
Vice-President—Wm. H. Dieffenbach, M.D.
Treasurer—Albert G. Weed, M.D., New York City.
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After the dinner Dr. Robert T. Morris was introduced as Toastmaster by Mr. Charles Capehart, Campaign Director. After cordially greeting the company and reciting the facts relating to the history of the movement, he presented Mme. Ellen Dalorsy and Mr. William Gustafson, members of the Metropolitan Opera, who sang most acceptably.

The Honorable Samuel Untermyer who had been scheduled to speak was detained by illness but sent a cordial letter of approval which was read.

Pressing engagements prevented the attendance of several other prominent men in public life.

Dr. John David Stewart, Professor of Surgery in The University and Bellevue Hospital Medical College, met the requirements of the occasion, mingling humor and pathos in a speech abounding in apt illustrations which produced a deep impression on the audience. One especial feature was the recital of an original poem setting forth the joy of rest as might be expressed by the worn-out doctor.

The Hon. Royal S. Copeland, United States Senator and formerly New York City Health Commissioner, spoke hopefully of the prospect of reducing taxes levied on physicians, and detailed his efforts to have the losses due to personal illness credited to other exemptions, comparing the exemptions provided for lawyers as unfair when contrasted with those available for doctors. He made a ringing appeal for broader functions of government, providing for

protection of humanity as well as property. He felt sure that the public would be glad to assist in a movement to care for the physician and his wife in the hour of need.

Dr. W. P. Bowers, Managing Editor of the *BOSTON MEDICAL AND SURGICAL JOURNAL*, reported some of the activities of the Massachusetts Medical Benevolent Society which is caring for twenty-two beneficiaries, five of whom are doctors, the remainder being widows and orphans of physicians, with small gratuities and expressed the belief that Massachusetts would be ready to do her part in a movement so praiseworthy as the one under consideration.

Rabbi Israel Goldstein referred to the earlier functions of the physician and priest as exercised in one person who practiced medicine as a livelihood and ministry as an avocation.

Don C. Seitz of the *New York World* spoke of the work of his father who was a physician practicing in one of the central states, who exemplified the virtues and trials of a general practitioner. Drawing his inspiration from the example of this hard working doctor and self sacrificing clergyman, he went on to argue for a proper appreciation of the debt which humanity owes to self sacrificing servants who become so interested in their work as to neglect making provision for the lean years of later life.

Dr. William H. Dieffenbach reported having made a visit to the Physicians' Home and became keenly interested in the project because of striking demonstrations of the great good accomplished in providing for a cultured and refined guest over seventy years of age who had held teaching positions and served the public for more than forty-five years. The freedom from immediate care and apprehension of the future brought about physical restoration and later provision was made for accommodations among old friends.

Hon. John J. Kindred, M.D., member of Congress, made a stirring appeal for coöperation in carrying the plan through to a successful end.

The Home in a locality bearing an Indian name which means "where Heaven touches the earth" carries the sentiment embodied in the aboriginal conception of the locality.

Dr. Warren, President of the Save a Life League, gave an illustration of the function of his organization and felt sure that the Physicians' Home would operate to accomplish much in saving life and promoting happiness.

A guest on the floor told of the interest shown in this plan by a friend who asked him to present a check for five hundred dollars which was handed to Dr. Morris. The interest was so marked and sustained that the Toastmaster could not abbreviate the exercise and it was nearly midnight when the meeting adjourned.

The project is now before the profession and the people, and should receive generous sup-

port. Mr. Capehart, the Campaign Manager, is already at work developing plans for greater publicity.

THIS WEEK'S ISSUE

Contains articles by the following named writers:

GIBBON, JOHN H., M.D., Professor of Surgery, Jefferson Medical College; Surgeon to the Pennsylvania Hospital; President, American Surgical Association. His subject is "The Influence of Boston on American Medicine." (Ether Day Address.)

MINOT, GEORGE R., A.B., M.D., Harvard Medical School, 1912; Physician and Chief of the Medical Laboratories of The Collis P. Huntington Memorial Hospital; Assistant Professor of Medicine, Harvard Medical School; Associate in Medicine, Peter Bent Brigham Hospital; Special Consultant in Diseases of the Blood, Massachusetts General Hospital; Member, Association of American Physicians, etc. His subject is "The Physician, Student and Medical Social Worker."

FITZ, REGINALD, A.B., M.D., Harvard Medical School, 1909; Associate Professor of Medicine, Harvard Medical School; Physician to the Peter Bent Brigham Hospital. Associated with him is

WILLIAM P. MURPHY, M.D., Harvard Medical School, 1922; Assistant in Medicine, Harvard Medical School; and Junior Associate in Medicine, Peter Bent Brigham Hospital. The subject of the article is "Diabetes, Insulin and Pregnancy."

OTTENHEIMER, EDWARD J., B.Sc.; M. D., University of Virginia, 1922; Assistant Surgeon at St. Joseph's Hospital, Willimantic, Connecticut. His subject is "Sacral Anesthesia."

BOOS, WILLIAM F., A.B.; Ph.D., Heidelberg, 1896; M.D., Harvard, 1901; Consulting Expert in Chemistry, Medicine and Toxicology for several States and the Federal Government; Member of The Industrial Poison Committee of the National Safety Council; Consulting Physician for several insurance companies. His subject is "On Nitrous Fume Poisoning."

VIETS, HENRY R., B.S.; M.D., Harvard Medical School, 1916; Assistant Neurologist, Massachusetts General Hospital; Instructor in Neurology, Harvard Medical School; Member, American Neurological Association, Boston Society of Psychiatry and Neurology, etc. His subject is "Neurosyphilis: Early Recognition and Economic Importance."

SEELYE, WALTER C., A.B.; F.A.C.S.; M.D., Harvard Medical School, 1900; Visiting Physi-

cian, Worcester Memorial Hospital. His subject is "Gall Bladder Surgery."

ENGEL, GILSON COLBY, A.B., Student in Harvard Medical School, class of 1926. His subject is "Cholecystography—A Review of the Literature."

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

CHARLES E. MONGAN, M. D., *Chairman*
FREDERICK C. IRVING, M. D., *Secretary*
THOS. R. GOETHALS, M. D., *Clerk*

Boston Lying-In Hospital, Boston, Mass.

(Communications and questions addressed to the Clerk will be gladly received and cheerfully answered.)

The Section wishes to announce that it is prepared to supply papers of obstetrical interest to the general practitioner to be read as part of any district, town, or city Society program. Requests for such papers with suggestions as to subjects desired will be welcomed by the Section through its usual channels.

* * * * *

The city of Boston has reported ninety-three deaths in the puerperal state from January 1 to August 21, 1925. These deaths are classified as follows:

Abortion, miscarriage,	6
Ectopic pregnancy,	2
Chorea of pregnancy,	1
Postpartum hemorrhage,	5
Placenta previa,	5
Antepartum hemorrhage,	5
Cesarian Section,	2
Accidents of labor,	7
Puerperal septicemia,	29
Puerperal embolism,	10
Puerperal albuminuria,	20
Puerperal breast abscess,	1
Total,	93

Inversion of the uterus occurred twice in the above cases, once in a case dying of postpartum hemorrhage, once classified as an accident of labor. Cesarian section was the method of delivery in two fatal cases of antepartum hemorrhage, in four dying of septicemia, in three dying of embolism, and in three where the death was classed as albuminuria. In one of the cases of accident of labor death was due to hemorrhage, while in one case of albuminuria death resulted from embolism. Four septicemic deaths followed abortion.

The puerperal deaths in Boston for the cur-

rent year tabulated above show the occurrence of two cases of a very rare complication of labor, e. g., inversion of the uterus. Inversion may occur spontaneously following a normal delivery where the lower uterine segment is markedly relaxed, where the intra-abdominal pressure is very great, and where fundal insertion of the placenta may be the predisposing cause; several such cases have been reported. More frequently, however, it is due to mismanagement of the third stage of labor, in that either the umbilical cord is pulled upon to expedite delivery of the placenta, or that vigorous efforts are made to express the placenta by the Crede manœuvre during a period of uterine relaxation.

The diagnosis of inversion of the uterus is simple in those cases where inversion is complete and where the entire organ prolapses inside out through the vulva. Not all cases, however, are so easily diagnosed as the inversion may be only partial, and the uterus may not protrude. Characteristic of this condition is a moderate to severe postpartum hemorrhage with a degree of shock and constitutional reaction disproportionate to the amount of blood lost. Palpation of the uterus through the abdominal wall will show the organ deep down in the pelvis, often hard to feel at all, and always difficult to grasp with the palpating hand. If the uterus regains sufficient tone the hemorrhage is ordinarily checked, but the state of shock continues and a definite crater-like depression is felt in the fundus. Vaginal examination will, of course, show the inverted fundus protruding down through the os.

Inversion of the uterus is chiefly to be guarded against by not hurrying the third stage. The umbilical cord must never be used as a traction apparatus for delivery of the placenta, and attempts to express the placenta should be made only when the uterus is contracting.

Should inversion occur the uterus should be replaced. This is usually accomplished without undue difficulty if the condition is promptly recognized, and if the patient is anesthetized; without anesthesia the effort is apt to be fruitless. Occasionally the cervix must be dilated manually somewhat to allow the fundus to be replaced, as the cervix has a tendency to shut down around the latter. Taxis upward should be made with the fingers and thumb, gradually reducing the herniated mass into its normal position. Care must be taken to apply the reducing force along the line of the axis of the superior strait of the pelvis, as the inversion has taken place along this line; if this point is not closely followed attempts at reduction will fail. After replacement the uterus should be packed for twelve to twenty-four hours to prevent recurrence of the inversion from intra-abdominal pressure.

Unrecognized inversion of the uterus usually

eventuates in strangulation and gangrene of the herniated portion with consequent septic invasion, and is therefore of very serious import.

MEMBERSHIP CHANGES

- Dr. William Pearce Coues has opened a Boston office at 9 Newbury Street.
- Dr. Frederick E. Cruff has moved from Brighton (Middlesex South) to Hyde Park (Norfolk). Office, 1339 River Street.
- Dr. Thomas H. Odeneal has moved from Beverly (Essex South) to West Palm Beach, Florida (Non-Resident List). His address is Citizens Bank Building.
- Dr. George Robbins has been transferred from Essex South to Suffolk. Office, Essex Sanatorium, Middleton.
- Dr. Alice H. P. Robie has moved from Watertown (Middlesex South) to Los Angeles, Calif. (Non-Resident List), 622 South Serrano Street.
- Frederick H. Weber and Mary A. J. Weber have moved from Stoneham (Middlesex East) to Worthington, Ohio (Non-Resident List).

MISCELLANY

MODERN HEALTH CRUSADE WORK

THE Modern Health crusade work carried on by the Boston Tuberculosis Association which is affiliated with the Massachusetts Tuberculosis League has taken on an added interest this year. Over 11,000 children have been enrolled in the Health work. The parochial schools number twenty, while the public schools aggregate nine.

Miss Mary Clifford, R. N., is in charge of the Crusade work. She is eminently qualified for the work, having done follow-up work with disabled veterans at the Veterans' Bureau and institutional work for many years. Miss Clifford is a graduate of the Boston City Hospital and the Simmons School of Public Health Nursing. Since the Armistice Day Parade, Miss Clifford has received much favorable comment on the float admirably depicting her work. Thus far this year ninety classes have been talked to individually on the Service and Aim of the Modern Health Crusade and instructions have been given on how to adapt oneself to its use. Miss Clifford states that the greater interest so far has been in gaining the coöperation of the teachers in working with the Crusade so that they may start the children with a good understanding of the chores and enrolling the schools.

Miss Bernice W. Billings, the Executive Secretary of the Boston Tuberculosis Association, is very enthusiastic about the progress of the health work and feels that it should assist admirably in the coming Christmas Seal Sale. The assistance of the schools has always been an important factor in Seal work. The opening of the Campaign has been scheduled for November 27th and will begin with a concentrated drive eclipsing that of all other years.

TUBERCULOSIS AND THE SEAL SALE

DR. EDWARD O. OTIS, Member of the Executive Committee of the Boston Tuberculosis Association, and Ex-President of the Massachusetts Tuberculosis League, states in his annual article to *The American Physician*, that Pasteur's saying that in order to have a healthy silk worm we must have a healthy cocoon, has often been quoted in reference to the health of the child. In order to have a healthy adult, we must have a healthy child and keep him healthy. Likewise in order to prevent tuberculosis in the adult we must prevent its active manifestation in the child.

"But how can we prevent tuberculosis in the child when we are told that the majority of children are tuberculously infected before they arrive at adult age, and familiar statistics are quoted to substantiate this fact," says Dr. Otis.

Undoubtedly this is true in thickly settled communities and with such children as we see in our dispensaries. In sparsely inhabited communities, however, and in isolated rural districts there is evidence to show that the percentage of infection is much less. But infection is not active disease, and in the majority of cases it never becomes so. On the other hand, a tuberculosis infection may be and often is a protection and renders one more or less immune to subsequent infections. Furthermore, if active disease does occur in the adult, this childhood infection renders it less severe and more curable.

Mr. Robert Kiernan, the League's Executive Secretary, is constantly "on the go," supervising the entire State in order to make the coming Christmas Seal Campaign the greatest ever known.—*Bulletin Massachusetts Tuberculosis League*.

THE HEALTH OF CHICAGO

THE death rate of cities having a population of a million or over gives Chicago the best showing for 1924. The statistics are as follows:

	Population	Deaths Per 1000
CHICAGO	2,939,605	11.2
Berlin	4,018,000	11.7
New York	6,015,504	11.8
London	7,476,168	12.1
Detroit	1,019,333	12.6
Philadelphia	1,951,076	12.9
Paris	2,906,472	14.3

This leaves much to be discussed in Boston where the death rate from all causes during 1924 was 14.07.

We confidently expect that plans now underway will bring Boston's rate into harmony with the cities mentioned.

THE OUT-PATIENT DEPARTMENT: HOW CAN IT BE UTILIZED IN MEDICAL EDUCATION?

SYNOPSIS OF ADDRESS OF DR. STEPHEN RUSHMORE, DELIVERED AT THE STAFF MEETING OF THE BOSTON DISPENSARY, NOVEMBER 17, 1925

WHAT is the physician trying to do? Certainly to prevent, to cure or to relieve disease. But what is disease? The thesis that our conception of disease determines what we do about it is ably set forth at length in Faber's Nosography. In general we regard disease as a certain reaction of the individual to his environment and the cause of the disease comprehends every factor without which the disease would not exist. A restricted view for a particular purpose may properly emphasize one or another factor. But we are prone to regard disease as an entity which may be separated from the patient. Yet we have here again in recent years come to regard the patient who is sick as the focus of the physician's attention.

In the wide field of activity in caring for persons who are sick, the Out-Patient Department has a limited function; so limited, according to Sir James Mackenzie that the great future development of medicine will be outside its scope.

But within the limits of its field, it does valuable work and within these same limits it can be used in the training of the medical student. In particular three opportunities may be mentioned:

- (1) "Observation" clinics for the detection of signs of disease without much attention to the name of the disease which produces the sign;
- (2) Clinics in which the purely medical aspect of the individual is studied, comprehending diagnosis and treatment;
- (3) Opportunity for studying the individual as a person, in his environment, largely through the assistance of the social service department. Here alone can be attempted a comprehensive study of the cause of disease, in so far as an attempt is made to get at every factor which goes to produce the diseased condition of the individual.

EVALUATING HEALTH WORK

THE Connecticut State Department of Health has analyzed the report of the Health Survey which was conducted by the Research Division of the American Child Health Association in 1924 covering 86 cities with a range of population from 40,000 to 70,000 as follows:

The 86 cities, distributed over 31 states, presented interesting local problems with promise of special developments in the health field through their increasing population or commanding position as country seats. Four surveys were assigned to the study which was carried out in a similar way in each city. The study included their Characteristics, Organization and Personnel of the Health Department, Vital Statistics, Communicable Disease Control, Venereal Disease Control, Tuberculosis Control, Maternity Hygiene, Hygiene of the Infant, Pre-School and School Child, Sanitation, Laboratory Facilities, Health Instruction, Public Health Nursing, and Recreation. The survey was completed in some five months, after which it was tabulated by expert statisticians and the results presented in the aforesaid book.

The results are illuminating—Note some of the high lights.

SUMMARY OF DEPARTMENT OF HEALTH

Full time health officers in 45 cities of the cities studied.

Sixty-four health officers have a medical degree, and two have a public health degree.

No health board in 16 cities, in 18 cities the board of health consists of the city commissioner or the city council.

No public health nurses in 19 departments of health.

Dentists, full or part-time in 16 cities, dental hygienists in three.

Sanitary inspections ranged from two to three in the majority of cities.

As to *communicable disease control* there was great diversity in the methods used.

Twenty-eight procedures for quarantine release of diphtheria patients.

Twenty-five release procedures for scarlet fever.

A third of the cities still use gaseous fumigation against diphtheria and scarlet fever.

Forty cities have undertaken immunization against diphtheria.

The Study of Maternity Hygiene revealed the need for much educational work since.

Ten mothers die yearly from childbirth in cities of 50,000.

The average stillbirth was 41 per 1,000 births.

But 40 cities have established prenatal clinics, and 5, mothers' references with nursing supervision.

The Infant Group is better cared for than any other.

Eighty cities had infant hygiene clinics. Twenty-five cities provide no clinic or nursing care.

The Pre-School Child is still sadly neglected. Eighty-four cities have nursing service in the schools, and 69 medical school service.

Sixty-five cities have given health education an important place in the school curricula.

Every city has one or more public health nurses.

U. S. DEPARTMENT OF LABOR, CHILDREN'S BUREAU, WASHINGTON

EXAMINATION of nearly 600,000 infants and pre-school children at 26,353 child-health conferences during the fiscal years 1924 and 1925 was reported to the Children's Bureau of the U. S. Department of Labor by States coöperating under the Federal Maternity and Infancy Act, according to a statement made public.

Forty-three States and Hawaii are coöperating under this Act, which provides Federal aid for the promotion of the welfare of mothers and babies, Vermont, Louisiana and Rhode Island having accepted during the fiscal year 1925. States not coöperating are Connecticut, Illinois, Kansas, Maine, and Massachusetts. The Children's Bureau made public an official report covering the State accomplishments during 1924, together with preliminary figures for 1925.

These figures show that, in addition to the examination of babies and young children at the child-health conferences, maternity and infancy activities during 1924 and 1925 included the holding of 9,669 prenatal conferences attended by approximately 75,000 women, classes for midwives with a total attendance of approximately 40,000, the holding of mothers' classes with an attendance of more than 162,000 mothers, and the organization of over 5,000 "little mothers" classes. The number of child-health centers established was 1,706; the number of prenatal centers, 245.

Although centers are for "well babies," the report states, defects are frequently found which require correction before the child is free to gain a maximum of physical fitness. Defects most frequently encountered are refractive errors in the eyes, naso-pharyngeal growths and abnormalities, orthopedic defects, glandular enlargements or insufficiencies, dental caries, malnutrition (always the large percentage in every group). Children are always referred to family physicians for the correction of these defects, if there is a physician. A few States have arranged for clinics at which defects may be corrected by a staff physician or a specialist. Some States furnished estimates of defects corrected during 1924, ranging usually from 20 to 40 per cent.

Other important activities under the Act include home visits by nurses in sparsely settled country where health conferences are not possible, nutrition work for expectant mothers and for children, efforts to make good confinement and postnatal care possible for mothers, inspection of maternity and infant homes, improvement of birth registration, the distribution of

silver-nitrate solution to prevent ophthalmia neonatorum (blindness of the newborn), antidiphtheria campaigns, campaigns to have all preschool children examined before school entrance, general educational work.

The Children's Bureau also reports as to the cost of the Act and the total appropriations, National and State, spent in accordance with its provisions. The Act authorizes \$1,240,000 annually for 5 years, (the five-year period ends June 30, 1927) \$50,000 of which may be spent by the Children's Bureau for administrative and investigating purposes. From 1924 appropriations the States accepted \$918,280, from 1925 funds, (up to October 1, 1925) \$949,827. During the fiscal year 1924, the Children's Bureau spent for administrative and investigating purposes, \$35,578; during 1925, \$42,972. Estimates on a per capita basis show that Federal appropriations for maternity and infancy work cost annually less than one cent per inhabitant of the United States.

Commenting on the report of work done under the Act, Grace Abbott, chief of the Children's Bureau, said:

"The provisional figures for 1924 of the vital-statistics division of the Bureau of the Census indicate a substantial drop in the infant death rate for both urban and rural communities in the United States birth-registration area; but even with this improvement the infant death rate in the United States is higher than in Australia, the Netherlands, Norway, Sweden, and the Irish Free State, and no State in the United States birth-registration area has so low a rate as New Zealand. It is quite evident, therefore, that the United States cannot afford to slacken its interest or reduce in any way the intelligent expenditure of funds to lower the death rate among babies.

"A report on maternal mortality, which will be published soon by the Bureau, shows that a very high percentage of the losses are due to preventable causes. It is, therefore, especially important that the program for prevention of the unnecessary deaths in childbirth should be pushed. Here, too, the United States lags behind many countries. Demonstrations of successful methods of conducting prenatal clinics have been made in many places under the maternity and infancy act. A beginning has been made in getting a State program of work understood and actually under way in some communities. On the basis of this experience an expansion of the work can economically be undertaken.

"Last year the benefits of the maternity and infancy act were extended to Hawaii. The high death rates in Porto Rico and Alaska also make assistance from the United States of special importance.

"The United States Government is expending at the present time less than \$1,000,000 a

year in subsidies to the States for the promotion of a health program for mothers and babies. Great Britain is expending nearly five times that amount in 'grants in aid' to local communities for maternity and child health, enabling the 'health visitors' to reach an estimated 89 per cent. of the children born in a year in England and Wales and 13 per cent. of the expectant mothers."

DEFECTIVE EYESIGHT AND INDUSTRY

DEFECTIVE eyesight is affecting the country's industrial output, is handicapping education, and is a growing menace to human welfare, it is asserted by the Eye Sight Conservation Council of America in a comprehensive eyesight survey of two years' duration covering the entire field of eyesight conservation. The deleterious influence of eye defects and eye diseases, it is declared, is a challenge to civilized effort in social control.

Massing all existing data, and supplementing it with the results of original research, the Council finds that defective vision is widespread among industrial workers and school children, and that it is a prolific source of waste in both industry and education.

Summarizing conditions in education, the report, called the most comprehensive of its kind ever completed in this country, says that 25 per cent of the school children in the public schools of the United States "have manifest defects of vision and symptoms of eyestrain." This result was reached through simple visual acuity tests.

The survey, it is stated, covers eye tests of more than 14,200,000 school children and students enrolled in public schools, state normal schools, universities and colleges.

"Reports of State Departments of Education and State Boards of Health since 1907 furnished data covering 9,023,000 eye examinations of public school children," said the report explaining the basis upon which it concludes that a situation justifying alarm exists.

"Various municipal and rural reports since 1907 cover 4,300,000 examinations in public schools; while the most recent statistics have been furnished directly in reply to inquiries sent to public school authorities of 247 of the largest cities in the country, to the 300 state normal schools and teachers' colleges, and to the 750 colleges and universities in the United States."

The survey of 247 city schools provided statistics of the results of testing the eyes of 863,936 children. Of this number, one group of 483,154 shows, according to the report, that 21.9 per cent had defective vision. A similar conclusion, it is said, was reached by the Federal authorities.

Defective vision is increasing among older students, the survey in colleges and normal

schools indicates. In sixteen state normal schools and twenty-three colleges and universities having a total enrolment of approximately 100,000 students, 54,695 tests were made, showing that 18,706 or 40 per cent had defective vision.

Two-thirds of those reporting found defective vision within the range of from 35 to 50 per cent. "It is safe to assume," says the report, "that this prevalence of defective vision among these students at the beginning of their university studies was undoubtedly higher than prevailed with these same students in their earlier years."

Poor eyes, it is disclosed, induce retardation and are responsible in some measure for the backward student. "The proportion of retardation found among four groups of school children with defective vision, totalling 28,667," the report continues, "varies from 60 to 85 per cent and averages 67 per cent. The prevalence of defective vision, found among six groups of pupils retarded in their progress, varies from 12 per cent to 81 per cent."

Eyesight, as an important factor affecting the output of the industries of the United States, is being overlooked, the report asserts. A survey was made to determine the prevalence of visual defects among industrial workers and the methods practised by industrial concerns for examining the eyes of their employees.

Information was furnished by 170 companies located in 23 states and employing over 1,000,000 persons. The data furnished by 40 companies was complete enough for adequate summary and comparison.

"The records of these 40 companies," the report adds, "cover the examinations of the eyes of 204,817 employees. The kinds of tests used vary from the very simplest to thorough eye examinations."

"Even though the prevalence of defective vision was reported by one company as low as 5.3 per cent, which is no indication of the true condition, the average proportion of defective vision as reported by the 40 companies was 44.3 per cent."

"The records from 20 companies of 150,782 eye examinations or 77 per cent of the 204,817 examinations reported showed the prevalence of defective vision ranging from 48.3 per cent to 79.2 per cent and averaging 54 per cent."

"This group of 200,000 industrial eye examinations is many times larger than any group that has previously been studied for the purpose of arriving at definite conclusions."

"It is considered sufficiently large and properly distributed both geographically and according to the type of industry to establish an accurate incidence of the proportion of defective vision among the 42,000,000 gainfully employed persons in the United States."

Sections of the report, compiled by Joshua

Eyre Hannum, research engineer of the Eye Sight Conservation Council of America, and edited by Guy A. Henry, the Council's general director, deal with eye hygiene, eye diseases, eye defects, eyesight and education, eyesight and occupation, eye protection, and illumination of school and home.

One section tells of the struggles with poor eyesight of noted persons, including Francis Parkman, Tchaikowsky, George Eliot, William Wordsworth, Theodore Roosevelt, Goethe, Margaret Fuller, Jonathan Swift, John Greenleaf Whittier, H. G. Wells, Honore de Balzac, Adelaide Ristori, Basil King, Taine, and Nietzsche. Whittier, it is said, was color blind, and Taine was cross-eyed. Relentless use of the eyes, according to the report, hastened the death of Balzac.

A CORRECTION

On page 995 of Volume 193 in the review of the book under title of "Preventive Medicine," by Dr. Mark F. Boyd, there appeared the word "Preventative" in place of "Preventive" as it should have been written. The author of the review is a well known Public Health Official who is well versed in the use of English composition and spelling but happened to let this error get by, for which he is duly apologetic.

A FAVORABLE SHOWING

THE Bulletin of The Metropolitan Life Insurance Company for October in its report of statistics of deaths among its policy holders shows a drop of 17.7 per cent. in the tuberculosis death rate for the first nine months of 1925 as compared with the same period in 1924. Diphtheria shows a lower rate than ever before recorded. Pneumonia and other respiratory conditions also show a decline as do organic heart disease, cerebral hemorrhage and nephritis. As an offset, however, cirrhosis of the liver, wood alcohol poisoning and automobile fatalities show an increase.

RHODE ISLAND MORTALITY STATISTICS: 1924

THE Department of Commerce announces that the 1924 death rate for Rhode Island was 1,248 per 100,000 population as compared with 1,376 in 1923. This decrease in 1924 is largely accounted for by decreases in the death rates from measles (from 32 to 2 per 100,000 population), pneumonia, all forms (from 136 to 111), tuberculosis, all forms (from 100 to 85), influenza (from 24 to 10), diseases of the heart (from 204 to 193 per 100,000 population), diarrhea and enteritis, under 2 years (from 35 to 24), whooping cough (from 18 to 8), and bronchitis (from 14 to 9).

Increases appear in 1924 in the death rates from appendicitis and typhlitis (from 11 to

18 per 100,000 population), and scarlet fever (from 2 to 5).

There was also a slight increase in typhoid and paratyphoid fever, cancer and other malignant tumors, rheumatism, diseases of the heart, diseases of the arteries, atheroma, aneurysm, nephritis, and automobile accidents.

NOTES RELATING TO THE SEAL SALE

MR. FRANK KIERNAN, Executive Secretary of the Massachusetts Tuberculosis Association, has received word from the twenty-seven affiliated organizations throughout the State that the Christmas Seal Campaign is now in full swing. All the Seals have been distributed to their respective destinations. To meet the last minute demands for supplies it was necessary to appeal to Connecticut which furnished 1,000,000 Seals.

Lady Diana Manners, star of "The Miracle," has sent a personal endorsement to Mr. Kiernan and has offered to contribute her services in any way possible to aid the Association.

The mail of the Boston Tuberculosis Association is the heaviest ever experienced in the history of the Seal Sale, according to Miss Bernice Billings, the Executive Secretary.

Senator William Butler, in his office today, addressed a special endorsement to the Massachusetts Tuberculosis League expressing his hope that every citizen of the State will do his or her bit to stamp out the "Great White Plague" by buying Christmas Seals. Mr. Kiernan is now receiving communications from officials and prominent people all over Massachusetts expressing their desire to help in any way possible to carry the 1925 Christmas Seal Campaign over the top!

RECENT DEATHS

ROUNSEVILLE—DR. WILFRED ELLSWORTH ROUNSEVILLE died at his home in Attleborough, November 21, 1925, aged 43.

Dr. Rounseville was a native of Attleborough, a graduate of Amherst in 1905 and of Harvard Medical School in 1909. He joined the Massachusetts Medical Society in 1914 and was the first city physician of his native town. At the time of his death he was serving his second term. In 1911 he married Kathleen Robinson of Vineyard Haven, who survives him with four children.

GAVIN—DR. JOSEPH LEO GAVIN, a practitioner of Dorchester, died at the Peter Bent Brigham Hospital, November 28, 1925, aged 55.

He was born in Roscommon, Ireland, March 19, 1870, came to America when a young man and spent four years, from 1894 to 1898, in Harvard Medical School. He had practiced in Dorchester since.

HILDRETH—DR. JOHN LEWIS HILDRETH, for many years a prominent practitioner of Cambridge, professor of clinical medicine at Tufts College Medical School, died at Winchester, where he had made his home for the last thirteen years, on November 27, 1925, at the age of 86.

Dr. Hildreth was born in North Chelmsford, November 29, 1838, the son of John C. and Harriet Maria

(Blanchard) Hildreth. From Dartmouth College he received his A.B. as of the class of 1864, and his M.D. in 1867. In 1900 he was honored with an LL.D. from Tufts. During the Civil War he was United States sanitary and relief agent and inspector of camps and hospitals, and later he was principal of the Peterborough Academy in New Hampshire. He settled in practice in West Townsend in 1868 and joined the State medical society. After he had moved to Cambridge in 1870 he was a member of the School Board for 19 years. During 1875 and 1876 Dr. Hildreth was surgeon of the Fourth Battalion, and the following year he was medical director of the First Brigade, M. V. M. For five years he was medical examiner for Middlesex County, and in 1873 he organized the Cambridge Dispensary, of which he became clerk.

Dr. Hildreth was physician to the Cambridge Hospital for a number of years, and was professor of clinical medicine at Tufts College Medical School, where later he became dean and subsequently professor emeritus. He was a member of the Massachusetts State Board of Lunacy and Charity from 1895 to 1898, was a trustee of the New Ipswich (N. H.) Library, the New Ipswich Appleton Academy, and the Edward Hopkins Fund, and was a Fellow of the Massachusetts Medical Society (retired in 1909), a member of the St. Botolph Club of Boston and the Colonial Club of Cambridge. In 1864 Dr. Hildreth married Achsah B. Colburn of Temple, N. H. She died a number of years ago. He is survived by a son and a married daughter.

OBITUARY

MR. M. DOUGLAS FLATTERY

IN the death of M. Douglas Flattery, the medical profession has lost a sincere and energetic friend of scientific research in medicine. His career was a most unusual one and indicative of remarkable qualities. Entering the British Army when still in his teens, he served seven years as a private, corporal, sergeant, and passed the examination qualifying him for a captaincy. His seven years of service happened to be at a period in English history when there was no fighting of importance and he was never in action. He obtained distinction as a champion swordsman. Coming to this Country he entered Center College in Kentucky from which he graduated. Later he became a professor of Physiology at Center College and at the University of Nebraska, having also taken some medical courses at the Harvard Medical School. He later entered the Harvard Law School from which he was graduated and began the practice of law in Boston. This brought his attention to the legal business connected with the formation of film companies and he later became a Vice-President of a large company operating theatres exhibiting moving pictures throughout the United States. He was successful also in a number of business enterprises but he retained a keen interest in scientific medicine and was a generous giver of funds to promote research. His most notable gift was the establishment in the University of Lyons of a research foundation which has been of great service in the City of Lyons. As a member of the Boston Cancer

Commission, he has been active in stimulating research and obtaining financial support. He was instrumental in promoting and aiding biophysical research and clinical observation at the Eye and Ear Infirmary and in the study of glaucoma. Under the Conservation Bureau of the City of Boston he has conducted most important investigation on the treatment of gonorrhea in women and children. He was a firm believer in the need of thorough scientific research for a definite purpose and believed that financial support in this direction should be given especially in grants for investigation under the direction of experts, rather than in the establishment of professorships and the building of elaborately constructed institutions.

The effect of Mr. Flattery's energy will be long felt and like most work done in a thorough scientific spirit, his work will live after him, even when his name is forgotten.

CORRESPONDENCE

THE BOSTON HEALTH LEAGUE

November 21, 1925.

Editor, Boston Medical and Surgical Journal:

After reading your editorial on the Boston Health League, Inc., in the issue of November 19, it occurred to me that your readers might wish to know more about the organization of the League. A list of member agencies and a complete list of the officers is appended.

To understand the organization it is also necessary to know something of its by-laws. The "Corporation" consists of one accredited representative for every member agency. "Any agency, public or private, engaged exclusively in public health work or having a unit or committee engaged in public health work," may apply for membership. The president, vice-president, secretary, treasurer and the executive committee are elected annually by the corporation. "No officer need be a member of the corporation, but no agency represented in the corporation may have more than two representatives on the executive committee."

To the executive committee is specifically assigned the "general direction, management and control of all the property, business and affairs of the corporation" as well as "general control of the finances of the corporation, including the authority to collect funds, but any expenditures other than for current expenses shall be approved by the members of the corporation."

The president, vice-president, secretary and treasurer are *ex officio* members of the executive committee. This committee has power to appoint such additional officers or agents as it may deem necessary. The executive committee meets monthly, or more often when necessary, and the corporation at less frequent intervals. The president presides at meetings of the corporation.

Very truly yours,

G. C. SHATTUCK,

Chairman, Executive Committee,
Boston Health League, Inc.

AGENCIES WHICH COMPOSE THE BOSTON HEALTH LEAGUE

Beth Israel Hospital Association.
Boston City Hospital, Department of Social Work.
Boston Dispensary.
Boston Floating Hospital.

Boston Health Department.
Boston League of Women Voters.
Boston Metropolitan Chapter, American Red Cross.
Boston Public Schools, Department of Medical Inspection.
Boston Sanatorium.
Boston Tuberculosis Association.
Catholic Charitable Bureau.
Children's Hospital, Social Service Department.
Community Health Association.
Ellis Memorial and Eldredge House, Inc.
Forsyth Dental Infirmary for Children.
Hawthorne Club.
Health Exhibit Committee of Boston.
Household Nursing Association.
Jewish Maternity Clinic Association.
Lincoln House Association.
Massachusetts Department of Public Health.
Massachusetts General Hospital, Social Service Department.
Massachusetts Homeopathic Hospital.
Massachusetts Society for Social Hygiene.
Maverick Dispensary.
Medical Mission Dispensary.
Neighborhood Kitchen.
Nutrition Clinics for Delicate Children, Inc.
Peter Bent Brigham Hospital, Social Service Department.
South End Diet Kitchen.
Vincent Memorial Hospital.
Women's Municipal League.

OFFICERS AND MEMBERS OF THE EXECUTIVE COMMITTEE

John W. Bartol, M.D., honorary president.
Francis X. Mahoney, M.D., president.
The Rev. George P. O'Connor, vice-president.
Merrill E. Champion, M.D., secretary.
Richard G. Wadsworth, M.D., treasurer.
Miss Bernice W. Billings; John A. Ceconi, M.D.; Harold DeW. Cross, D.M.D.; Roy M. Cushman; Roger I. Lee, M.D.; Horace Morison, vice-chairman; Miss Sophie Nelson; Miss Florence Patterson; Stephen Rushmore, M.D.; George C. Shattuck, M.D., chairman; Miss Francis Stern.
Charles F. Willinsky, M.D., executive secretary.

THE HEALTH COMMISSIONERSHIP OF BOSTON

Athens, Georgia, November 24, 1925.

Managing Editor,

Boston Medical and Surgical Journal:

Your editorial on the Health Commissionership of Boston in the current issue of the JOURNAL is most timely. For some years past, as a member of the Massachusetts Department of Public Health, I had opportunity to observe the progress made by the various Boards of Health throughout the State, and I know Boston's progress has been most marked and substantial during the past few years.

It is likewise obvious that the Boston Health Department, under the direction of Dr. Mahoney, has reached a much higher level of efficiency than ever before. Coöperative relationships with physicians and volunteer groups exist to an extent not dreamed of a few years ago. The stage is all set for the greatest progress in Boston's health program that the city has ever known. It seems to me that all interested should work for the reappointment of the honest, efficient, broad-visioned Public Health Administrator, Dr. Francis X. Mahoney.

Sincerely yours,

BERNARD W. CAREY, M.D., Director.

THE FIRST DESCRIPTION OF GUMMA OF THE BREAST

Mr. Editor:

It is of interest to recall at what a comparatively early date this rare manifestation of syphilis was first definitely recorded. Gumma of the breast is

such a rare manifestation of syphilis that many who are interested in the surgical manifestations of this disease have never seen a case. The diagnosis may still be uncertain after pathologic examination has been made, the findings being so similar to those in tuberculosis of the breast. The clinical findings may resemble malignancy closely, particularly with axillary gland involvement in the sclerosing type of gumma.

The first definite description of this condition was made by Francois Boissier Sauvages, 1706-1767, Regius Professor of Medicine at the University of Montpellier. This was given at Leyden in 1763.

The translation from the Latin is that given in Power and Murphy's "System of Syphilis."

It reads: "I saw . . . an unmarried woman, aged 30, who had been using the extract of hyoscyamus for several months. She presented a tumor in each breast, the size of a hen's egg, dense and knobby. These tumors caused a lancinating pain, which extended at times as far as the axilla. But when I discovered that little ulcers were also present in the mouth, and in the vagina, resulting from syphilis ten years before, I ordered as usual Keyser's sugar plums, because mercury could not be used. The pain and the swelling in the breast disappeared, with every other sign of syphilis in six weeks, and there has never been any recurrence."

In 1920,* Lloyd Thompson reported a case of this unusual condition, which clinically seemed very definite, and gave an interesting review of the subject, with cases from the literature.

Very truly yours,

WM. PEARCE COUES, M.D.

*Thompson, Lloyd: A Case of Probable Gumma of the Breast. *Journal A. M. A.*, 1920, 74, p. 731.

A CORRECTION

Boston, Mass., December 1, 1925.

Editor, *Boston Medical and Surgical Journal*:

In the November 5th issue of the JOURNAL, on page 892, you stated that I had removed to Castine, Maine. That wholly incorrect statement, for which you could not possibly have had any authority, has caused quite a bit of annoyance to patients, other physicians and myself. Will you please see that a correction is made.

Very truly yours,

HAROLD L. BARCOCK.

A CONGRATULATION

Boston, November 19, 1925.

Editor, *Boston Medical and Surgical Journal*:

Allow me to congratulate Dr. Woodward upon his generous admission of error in the JOURNAL of today's date.

The Doctor says, "I cry, 'Peccavi'!"—I have sinned.

I think the Doctor has done himself an injustice in acknowledging to sin. I merely pointed out that he had blundered.

Very truly yours,

HENRY D. NUNN.

A REJOINDER

Mr. Editor:

Peccavi—I have sinned, says Mr. Nunn.

Let us see. In hoc peccat.—Cicero. Si unam peccavisses syllabam.—Plautus. Verbo peccavimus uno.—Ovid. Pecco—to do wrong, to err, to mistake, transgress, offend, abuse, injure, sin.—Latin dictionary.

Cicero, Plautus and Ovid are my witnesses that I confessed to no sin when I cried "peccavi." A blunder is thought my many (Mr. Nunn, perhaps, included) to be worse than a sin, but I am always ready to correct a misstatement. There be others who might profitably do likewise.

Vina peccatura is not sinful, but it is apt to spoil.

Both Mr. Nunn and myself being now satisfied that

unvaccinated New South Wales had in fifteen years, man for man, six times as much smallpox as partially vaccinated Massachusetts and indeed more cases in one year than Massachusetts in the fifteen, further spilling of words over the matter seems superfluous.

Sincerely yours,
SAMUEL B. WOODWARD.

THE CLICKING OF THE REEL

BY GEORGE DAVID STEWART, M.D., F.A.C.S.

All nature moves in harmony,
And, to attentive ears,
There comes, the poets tell us,
The "music of the spheres."
But nature's music ne'er awakes
That rapture which I feel
When, with the river's murmur, blends
The clicking of the reel.

You may sing the Bells of Shandon,
Or the bells of San Michel;
Their mystic power o'er mortals,
Their wondrous soothing spell—
In some dim and vast cathedral
Of the mighty organ's peal—
But these sounds sink 'neath the magic
Of the clicking of the reel.

When fleecy clouds obscure the sun,
Or when the Arctic haze,
Silent and swift from far Belle Isle—
A light of other days—
Or when across the Pollock Pool
The shades of evening steal,
The air with melody is full—
'Tis the clicking of the reel.

Dame Fortune's but a fickle jade,
Her favors you may miss;
Some other fellow wins the maid,
Some other man the kiss.
Let both go, hang! I'll take my chance
On the turn of Fortune's wheel
When a *Salmo Salar* takes the fly,
And turns the humming reel.

To land him 'tis ecstatic joy,
Peer of all earthly bliss;
And what alluring agony
To make and scare a miss.
But these transports transcendental
Are as nought to those I feel
When the rumble of the fight is on
The clicking of the reel.

When at last I'm crossing Jordan
It shall be my dearest wish
To obtain a heavenly order
Permitting me to fish.
There'll be fewer tears, less sighing,
Less reluctance by a deal,
And I'll land with colors flying,
To the clicking of the reel.

417 Park Avenue, New York.

NOTE:—Dr. Stewart has found that vacations devoted to salmon fishing are of great importance in keeping him in condition to meet the arduous duties of the life of a surgeon and teacher of medicine. His poem may lead other hard-working doctors to find relaxation in similar pursuits which promote physical vigor.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING NOVEMBER 21, 1925

Anterior poliomyelitis	2	Dog-bite requiring anti-rabic treatment	7
Chickenpox	247		
Diphtheria	91		

Encephalitis lethargica	4	Syphilis	43
German measles	15	Suppurative conjunctivitis	11
Gonorrhea	111	Trachoma	1
Influenza	18	Trichinosis	1
Measles	1,038	Tuberculosis, pulmonary	127
Mumps	53	Tuberculosis, other forms	7
Ophthalmia neonatorum	25	Tuberculosis, hilum	17
Pneumonia, lobar	144	Typhoid fever	8
Scarlet fever	213	Whooping cough	151
Septic sore throat	1		

DISEASES REPORTED FOR THE WEEK ENDING NOVEMBER 28, 1925

Anterior poliomyelitis	1	Ophthalmia neonatorum	22
Chickenpox	172	Pneumonia, lobar	118
Diphtheria	69	Scarlet fever	175
Dysentery	2	Syphilis	53
Encephalitis lethargica	3	Suppurative conjunctivitis	8
Epidemic cerebrospinal meningitis	1	Tuberculosis, pulmonary	80
German measles	25	Tuberculosis, other forms	8
Gonorrhea	95	Tuberculosis, hilum	15
Influenza	6	Typhoid fever	7
Measles	825	Whooping cough	158
Mumps	30		

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING NOVEMBER 14, 1925

Diphtheria	47	Chickenpox	58
Last week	30	Influenza	2
Diphtheria bacilli carriers	28	Mumps	8
Typhoid fever	5	Ophthalmia neonatorum	1
Last week	3	Pneumonia, lobar	33
Scarlet fever	48	Poliomyelitis	1
Last week	34	Septic sore throat	1
Measles	37	Tuberculosis, pulmonary	24
Last week	61	Chancroid	1
Whooping cough	67	Gonorrhea	27
Last week	46	Syphilis	27
Bronchopneumonia	22		

MORBIDITY REPORT FOR THE WEEK ENDING NOVEMBER 21, 1925

Diphtheria	35	Dysentery (amoebic)	1
Last week	47	Encephalitis, epidemic	2
Diphtheria bacilli carriers	13	German measles	1
Typhoid fever	3	Influenza	6
Last week	5	Mumps	12
Scarlet fever	50	Pneumonia, lobar	43
Last week	48	Poliomyelitis	1
Measles	93	Septic sore throat	3
Last week	37	Tetanus	1
Whooping cough	83	Tuberculosis, pulmonary	23
Last week	67	Tuberculosis, other forms	3
Anthrax	1	Gonorrhea	11
Bronchopneumonia	21	Syphilis	26
Chickenpox	69		
Conjunctivitis inf.	3		

MORBIDITY REPORT FOR THE WEEK ENDING NOVEMBER 28, 1925

Diphtheria	54	Last week	3
Last week	35	Measles	55
Diphtheria bacilli carriers	9	Last week	93
Scarlet fever	50	Whooping cough	32
Last week	50	Last week	83
Typhoid fever	5	Bronchopneumonia	28
		Chickenpox	67

Dysentery, amoebic	1	Tuberculosis, pulmo-	
Dysentery, bac.	1	nary	41
Influenza	9	Tuberculosis, other	
Mumps	10	forms	3
Pneumonia, lobar	43	Gonorrhea	40
Septic sore throat	1	Syphilis	31

AVERAGE DEATH RATES TUBERCULOSIS ALL FORMS IN CONNECTICUT, 1895-1923

5-Year period	Average death rate	5-Year period	Average death rate
1895-1899	171.4	1910-1914	145.8
1899-1904	170.7	1915-1919	138.6
1905-1909	161.6	1920-1924	95.4

It will be noted from the foregoing table that the average rate has almost been cut in two in this time. In fact, the tuberculosis death rate for 1924 was only 81.4 per hundred thousand population, which is less than half the average rate for the 10-year period 1895-1904 inclusive.

That tuberculosis has lost its place as king of the Men of Death is indicated by the following table, which shows cancer and pneumonia as each claiming more victims than does tuberculosis:

DEATH RATES FROM TUBERCULOSIS, CANCER AND PNEUMONIA IN CONNECTICUT

Year	Tuberculosis	Cancer	Pneumonia (all forms)
1920	118.5	99.8	149.6
1921	95.6	97.4	97.2
1922	92.7	104.2	121.8
1923	89.3	98.3	127.3
1924	81.4	104.2	100.4

(Rates are per 100,000 population)

Certain other diseases such as apoplexy, heart disease and Bright's disease also cause more deaths in Connecticut than does tuberculosis, but this is no reason for letting up in the tuberculosis campaign. Rather the success of the campaign should be considered reason for keeping it up.

RHODE ISLAND STATE BOARD OF HEALTH

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING NOVEMBER 14, 1925

Diphtheria	9	Pneumonia	1
Measles	91	Mumps	1
Chickenpox	16	Whooping cough	7
Scarlet fever	8	Ophthalmia neonato-	
Typhoid fever	1	rum	3

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING NOVEMBER 21, 1925

Diphtheria	10	Scarlet fever	8
Measles	123	Chickenpox	16
Typhoid fever	2	Influenza	5
Mumps	2	Whooping cough	30
German measles	5	Poliomyelitis	1

NEWS ITEMS

MARRIED—George Ellisha May and Winifrid Arnold, at Wyoming, N. Y., September 24, 1925.

YALE CLINIC AIDS CHILDREN—REPORT SHOWS 250 PATIENTS UNDER TREATMENT FOR TUBERCULOSIS—The first report of the tuberculosis clinic for children managed by the Yale School of Medicine and the New Haven Dispensary, made public November 28, shows that 250 New Haven children are now under care. The clinic has been in operation

since last December and is the only out-patient tuberculosis clinic in the country devoted exclusively to children under 6 years of age.—*New York Times*.

DR. EDWARD L. TWOMBLY has returned from abroad and will resume his practice.

MASSACHUSETTS GENERAL HOSPITAL, CHILDREN'S DEPARTMENT—The Children's Medical Department Alumni Association of the Massachusetts General Hospital held its annual reunion on November 19. The morning exercises consisted in ward rounds at the hospital, with a demonstration of cases and laboratory apparatus. In the evening a dinner was held at the University Club, at which the activities of the graduates of the service for the past year were announced. The speakers of the evening were Dr. Charles E. Wells, assistant superintendent of the hospital, and Dr. C. M. Jones, who gave his impressions of various foreign clinics.

AMERICAN ROENTGEN RAY SOCIETY—Dr. P. F. Butler of Boston has been elected first vice-president of the American Roentgen Ray Society for the year 1926.

DR. JOHN C. LINDSAY of Cheshire, Conn., formerly of the Boston State Hospital, was elected secretary of the medical section of the American Prison Association, at its annual meeting at Jackson, Miss., November 12, 1925. At this same meeting Sanford Bates, Massachusetts Commissioner of Correction, was elected president of the association.

THE APPOINTMENT OF PHILIP GRABFIELD, M.D., MEDICAL DIRECTOR OF THE BOSTON BOARD OF THE LIFE EXTENSION INSTITUTE—The Medical Advisory Board of the Boston Office of the Life Extension Institute has nominated G. Philip Grabfield, M.D., of the Harvard Medical School, as Medical Director. The Board consists of Richard H. Miller, M.D., chairman; Richard C. Cabot, M.D., Stephen Rushmore, M.D., Alexander S. Begg, M.D., Charles F. Wilinsky, M.D., George H. Bigelow, M.D., George S. Derby, M.D., Hilbert F. Day, M.D. The Medical Director of the national organization, Eugene Lyman Fisk, M.D., has approved this nomination and appointed Dr. Grabfield.

Dr. Grabfield graduated from Williams College, 1912, and Harvard Medical School in 1915; for one year he was Teaching Fellow in Pharmacology in the Harvard Medical School. From 1916 to 1917 he was medical interne at the Peter Bent Brigham Hospital. In 1917 he entered the service, and served for a year and one-half in France as a medical officer in the 26th Division; on his return in 1919 he was for one year Assistant in Roentgenology at the University of Michigan. Since 1921 he has been in practice in Boston.

He holds the following positions: Instructor in Pharmacology and Assistant in Medicine in the Harvard Medical School, Junior Associate in Medicine at the Peter Bent Brigham Hospital, Consulting Physician at the United States Veterans Hospital No. 44, Visiting Physician at the Boston Dispensary, Consulting Physician at the Psychopathic Hospital.

Under Dr. Grabfield's medical direction of the Boston organization the Advisory Council expects still better coordination of work between the examining staff, the X-ray Department under Robert G. Vance, M.D., the Laboratory Department and the consulting specialists: Samuel A. Levine, M.D., cardiologist; George C. Caner, M.D., neuropsychiatrist; T. Chittenden Hill, M.D., proctologist; Edwin A. Meserve, M.D., laryngologist; I. Chandler Walker, M.D., protein sensitization; William A. Hinton, M.D., pathologist; J. Herbert Waite, M.D., ophthalmologist.

NOTICE

The Massachusetts General Hospital and The Boston City Hospital will notify the BOSTON MEDICAL AND SURGICAL JOURNAL of surgical operations listed each day.

This information will be transmitted to all who may apply by telephone at 9.05 a. m. or later.

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital, Dec. 15, 1925, at 8:15 P. M. The program follows:

1. Demonstration of cases.
2. A Trip with the Society of Clinical Surgery to some of the Surgical Clinics of Europe. Dr. David Cheever.

All members of the Medical Profession, Medical Students and Nurses are invited.

S. A. LEVINE, M.D., *Secretary*.

PHYSIOLOGICAL CONFERENCE

The seventh weekly meeting of the Physiological Conferences will be held in the Bowditch Library of the Harvard Medical School on Monday, December 14, at 4 o'clock. Dr. K. R. Drinker will speak on "Physiological Experiments with the So-Called Hazardous Compounds of Zinc."

MEETING OF HARVARD MEDICAL SOCIETY

The Harvard Medical Society met at the Peter Bent Brigham Hospital on Monday evening, Nov. 30th. Dr. Davidoff presented a case of a girl, three and one half years old. For the last six months she had been apathetic, had loss of appetite and headache. Her nutrition was poor and she was very much under size. She drank unusual amounts of water daily and was found to have definite diabetes insipidus. The X-ray showed an area of calcification above the sella turcica. The diagnosis of a congenital cyst pressing upon the pituitary body was confirmed at operation and the cyst removed. Since operation her appetite has improved and the fluid intake has dropped off to a great extent. It remains to be seen whether the relief of symptoms will be permanent. It is not known whether diabetes insipidus is a neurogenic or a ductless gland trouble.

Dr. Wilson presented a sporadic case of anterior poliomyelitis in a boy of twelve years.

Twelve days before he had a slight coryza and later developed a weakness in the left leg and had a slight pain in the left knee. Physical examination revealed some stiffness of the neck and pain in the lumbar region on flexion of the neck or leg. Reflexes were absent in the left leg. Lumbar puncture showed a normal pressure with 36 cells and a 1+ globulin reaction. The diagnosis of this disease is usually missed in the pre-paralytic stage unless there is an epidemic. The presence of a coryza with a stiff neck and suggestion of Kernig's sign should make one very suspicious. A small number of these cases following early lumbar puncture show marked improvement. This has happened too often to be accidental. When the pressure is increased at the time, the puncture is most likely to produce improvement. Following the demonstration of cases the society was addressed by Professor V. Putti on the history of the University of Bologna. This was one of the first universities to be established in early mediaeval times. It had its beginning in the twelfth century along with the schools at Paris and Oxford. During the fourteenth century there were six to seven thousand students in attendance from all parts of Europe. Bologna had representatives among the early leaders in all branches of science and art.

The medical school had its beginning in the sea side town of Salerno near Naples. Southern Italy was a health resort of Europe at this time. This stimulated the pursuit of medical studies. Here anatomy was studied on swine. The school had an admirable scheme of dietetics. Its code of health became famous throughout Europe. A most interesting point was the development of a high standard of education for medical practitioners. As early as 1156 there was an organized Medical School at Bologna. Anatomy and Surgery were the prominent studies. Roger and Roland were two prominent surgeons of these early times. One of their successors discussed the problem of pus in the healing of wounds. He condemned the existence of pus in wounds as abnormal and disadvantageous.

Mondino of this school was the first after Galen to teach anatomy by the use of the cadaver. He lived in the latter part of the 13th century. He wrote a great text book of anatomy. To his successor is ascribed the discovery of the vermiform appendix, the chorioid flexus and the olfactory nerves. The school at Bologna attained its zenith in the 14th century. After that the University at Padua began to take the leadership. Vesalius, the greater reformer in Anatomy at Padua visited Bologna and may have taught there.

Malpigli, who made many epoch-making discoveries in medicine, was professor of anatomy at Bologna in the 17th century. He was a great microscopist. He demonstrated capillaries and

taste organs in the papillae of the tongue. He also held the chair of surgery.

Morgagni studied at Bologna and gained a name there which gave him the chair of anatomy at Padua.

Dr. Putti told of many other outstanding characters in medical history who were associated with and formed a part of the old and famous University of Bologna. At the close of his interesting historical account, Dr. Putti showed a film of Bologna as it is today, taken from the hill on which an orthopaedic hospital is situated. This work in orthopaedics is now carried on under the supervision of Dr. Putti. It represents the outgrowth of the care and service rendered to cripples by the Benedictine Monks, beginning in the 4th or 5th century.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex South District Medical Society

Wednesday, January 6—Beverly Hospital, Clinic, 5 P. M. Dinner, 7 P. M. Speaker, Dr. Paul D. White, Boston, "Recent Progress in the Study and Treatment of Heart Disease."
Wednesday, February 3—At 7 P. M. Hawthorne Hotel, Salem. Dr. Walter Timme, New York. Subject to be announced.
Wednesday, March 3—Lynn Hospital, Clinic, 5 P. M. Dinner, 7 P. M. Dr. Charles E. Mongan, Somerville, "Some Problems of Present-Day Practice."
Thursday, May 6—Censors meet at Salem Hospital, 3:30 P. M.
Tuesday, May 11—The Tavern, Gloucester. Annual meeting. Speaker to be announced.

Essex North District Medical Society

January 6, 1926—The semi-annual meeting at Haverhill.
May 8, 1926—The annual meeting at Lawrence.

Middlesex East District Society

January 13—At the Harvard Club at 6:30 P. M. Address by Dr. Richard Ohler, "Metabolism."
February 10—At the Harvard Club. Address by Dr. William F. Boor, subject, "Industrial Poisoning."
April 14—At the Harvard Club at 6:30 P. M. Address by Dr. William E. Ladd, subject to be announced later.
May—Annual meeting, Colonial Inn, North Reading. Subject and speaker to be announced.

Suffolk District Medical Society

January 6—At 8:15 P. M. Medical Section (meeting postponed from December). Dr. W. J. MacDonald will speak on "Experimental Work in High Blood Pressure."
January 27—At 8:15 P. M. Combined meeting with Boston Medical Library. "Medical Experience of an Explorer," Dr. J. Hamilton Rice.
February 24—At 8:15 P. M. Surgical Section. "Post-operative Care of Surgical Cases," Dr. Dean Lewis, Chicago. "Surgical Convalescence," by Dr. John Bryant.
March 31—At 8:15 P. M. Medical Section. Subject to be announced later.
April 28—At 8:15 P. M. Annual meeting. Election of officers. "Some Diagnostic, Prognostic and Therapeutic Aspects of Disorders of the Blood," Drs. George R. Minot, Cyrus C. Sturgis and Raphael Isaacs.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEWS

Pediatrics of the Past. An Anthology, compiled and edited by JOHN RUHRAH, M.D., Professor of Diseases of Children, University of Maryland. Paul B. Hoeber, Inc., New York, 1925.

"An anthology," according to the author, "connotes a homogenous selection of the very best material, of whatever kind; a chrestomathy

connotes a gathering of specimen extracts from the literature of a foreign language; a source book is necessarily made up of the basic original texts of a given set of scientific discoveries, and inventions. . . . The present collection is, at one and the same time, an anthology and a chrestomathy and a source book."

Ruhrah is not only a scholar but a sage. Pediatrics of the Past is a masterly, erudite anthology, delightfully selected and unusually interesting to the medical reader, but it is more than that—it is a philosophy, for through it runs the axiom that the present is laid on the foundation of the past. This is continually brought before the reader in the author's comments, and truly he who would read carefully or even casually these pages is impressed again with the fact that there is nothing new in medicine, and that we, who often ridicule the therapeutics of the past, will be equally open to ridicule from the sapient historians of the future.

To Hippocrates naturally belong the honor of opening the book and, as the author points out, the recent outbreak of epidemic encephalitis recalls the aphorism, "Lethargy with trembling is bad." Potts has given his name to a disease condition, but another aphorism meatly informs us that "Those who acquire a gibbon's spine with cough and asthma, before puberty, die." Is it such a far cry from the fourth century before Christ to the present?

Through all the history of pediatrics the most surprisingly familiar faces keep appearing. Felix Platter, for instance, who died in 1614, gave a most complete picture of Thymus death and Hezekiah Beardsley published in the transactions of the Medical Society of New Haven County in 1788 an account of congenital pyloric stenosis. Those who are impressed, however, with the modernity of our present methods in the care of infants would do well to read William Cadogan, who was born in 1711 and died in 1797. Cadogan apparently paid considerable attention to the details of infant care and it is refreshing to read that "a new-born child cannot well be too cool and loose in its dress; it wants less clothing than a grown person in proportion because it is naturally warmer, as appears by the thermometer, and would therefore bear the cold of a winter's night much better than any adult person whatever," and again "I would advise every mother that can, for her own sake, as well as her child's to suckle it. If she be a healthy woman, it will confirm her health; if weakly, in most cases it will restore her. It need be no confinement to her, or abridgment of her time; four times in four and twenty hours will be often enough to give it such; letting it have as much as it will take out of both breasts at each time." A judgment on our recent discovery that four hourly feedings will suffice a normal child!

The past sheds a clearer light on the knowledge of the present and Ruhrah has provided such a light.

The Early Diagnosis of the Acute Abdomen.

By ZACHARY COPE, B.A., M.D., M.S. Lond., F.R.C.S. Eng. Senior Surgeon to Out-Patients, St. Mary's Hospital, Paddington; Senior Surgeon to Bolinbroke Hospital, Wadsworth Common; Late Hunterian Professor, and Arris and Gale Lecturer, Royal College of Surgeons. Third Edition. Humphrey Milford, Oxford University Press.

This little volume is indeed one of the most valuable and most pleasing to read and most thorough and yet concise, that it has been our good fortune to come across for several years.

The author presents his subject in a masterful and attractive manner. He wastes no words, his sentences are concise, his descriptions are lucid and his knowledge of his subject of the most intimate. One feels, after reading only the first chapter, that the subject is certainly in the hands of a master who is giving richly of his own large and valuable experience and that that experience has been greatly enhanced by the fact that the observer is a most careful and thoughtful one.

The author stresses the importance of "the necessity of making a serious and thorough attempt at diagnosis" in all acute abdominal conditions. His treatment of the subject of abdominal pain and its significance in the early stages of the acute abdomen is of greatest interest and value. We never remember to have read before such adequate reasons for the situation of pain in its relation to the onset of various pathological conditions. The thoroughness of this chapter characterizes the whole remaining work.

This little volume, like the small volume of Binnie's handbook of Surgery, should be on the desk of every general practitioner as well as surgeon and will prove of the greatest aid in making difficult differential diagnoses in acute abdominal conditions. The twenty-eight drawings, which illustrate the text are also original and very valuable.

The Writing of Medical Papers. By MAUD H. MELLISH, Editor of the Mayo Clinic Publications. Second Edition, Revised. 168 pages. Published by W. B. Saunders Company, Philadelphia. Price \$1.50 net.

Within the compass of one hundred pages, the author gives us what may be regarded as authoritative information on the preparation of medical papers. Much of the text, such as the chapters on punctuation, choice of words, and construction, applies to the writing of all sorts of English, non-medical as well as medical. Other chapters deal with problems of a distinctly medical nature. The author's text is of the briefest. She employs numerous short extracts from the writings of others to emphasize the points she has made. There is ap-

pended a list of abbreviations for the titles of medical journals.

In this book we have a much-needed reference to which we may appeal. Not only that, but in a constructive way the author gives many valuable suggestions as to the writing of medical papers.

A Text-Book of Pathology. By FRANCIS DELA-FIELD AND T. MITCHELL PRUDDEN. Revised by Francis Carter Wood. 13th Edition. William Wood and Company. pp. 1354.

So familiar and well-established a text-book as this really needs no introduction by a reviewer. Covering the entire field of pathology, it comes the nearest among American works to Aschoff's widely used hand-book. For the purposes of students and the practitioner who has not time for a detailed study of pathology, this book stands head and shoulders above the rest. It is to be hoped that it will be available for many more generations of students.

The present edition, however, is somewhat disappointing. In an effort to avoid inclusion of facts not definitely established and controversial matters, much recent work of real value has been omitted. For example, the problem of autolysis is rather vaguely discussed, and no mention made of Bradley's brilliant work which has so beautifully explained the mechanism of the process. Similarly, neither under the heading of diabetes nor of the pancreas is there any mention of insulin, in spite of the important light thereby thrown on the rôle of the island tissue in diabetes.

In the discussion of bone tumors, some of the recent valuable work, the outgrowth of Codman's Registry of Bone Sarcomas, has been included, but not so much as might be desired.

The references are abundant, but here again there are few more recent than 1918.

William Cadogan (His Essay on Gout). By JOHN RUHRÄH. 12°, p. 114. Hoeber, New York, 1925.

This small book is a reprint of Cadogan's Essay with a title-page from the Knox, tenth edition, Boston, 1772, a short introduction by Ruhräh and the almost as well-known verse, "The Doctor Dissected or Willy Cadogan in the Kitchen." "A Dissertation on the Gout" was first published in 1771 and went through ten editions in two years. Cadogan lived in the formal 18th century with Smellie, the Hunters, Pott, Heberden and Fothergill. We know him, particularly, because of his work on gout. He was a fashionable practitioner in London for, roughly 50 years (1750-1800), but stirred the medical world by his doctrine of indolence, intemperance and vexation as three important causes of chronic disease.